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13. ABSTRACT (Maximum 200 words)

McDonald Army Community Hospital (MACH) is part of the Tricare Mid-Atlantic Region 2 (TMAR2). Tricare is the Department of Defense's latest effort to manage the health care delivery for its beneficiaries in an effort to control costs, improve quality, and increase access. Tricare Prime, with its voluntary enrollment process, is the cornerstone of Tricare. The purpose of this seminal case study is to detail the development and current status of Tricare Prime at MACH. A descriptive beneficiary survey was used to provide the commander with a current assessment of Tricare Prime enrollment. The overall response rate to the survey was 21%. A Pearson Product-Moment Coefficient (r) correlation matrix was calculated for the 34 study variables. Significant positive relationships were found to exist between enrollment in Prime (dependent variable and various other predictive variables to include: Familiarity with the Tricare Program; Receipt of a Tricare Briefing; and Overall Satisfaction with Most Recent Visit to MACH. A comparison of enrollees to nonenrollees revealed that enrollees expressed higher rates of familiarity with Tricare, higher rates of being presented with a Tricare briefing, were more satisfied with their last visit to MACH, and were more satisfied with MACH overall.

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**U.S. ARMY - BAYLOR UNIVERSITY GRADUATE PROGRAM  
IN HEALTH CARE ADMINISTRATION**

**A CASE STUDY: ACTIVE DUTY MILITARY FAMILY  
ENROLLMENT IN TRICARE PRIME AT  
MCDONALD ARMY COMMUNITY HOSPITAL**

**A GRADUATE MANAGEMENT PROJECT  
SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR A  
MASTER DEGREE IN HEALTH ADMINISTRATION**

**SUBMITTED BY:**

**CPT MICHAEL E. HERSHMAN, CHE**

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**18 JUNE 1996**

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## ABSTRACT

McDonald Army Community Hospital (MACH) is part of the Tricare Mid-Atlantic Region 2 (TMAR2). Tricare is the Department of Defense's latest effort to manage the health care delivery for its beneficiaries in an effort to control costs, improve quality, and increase access. Tricare Prime, with its voluntary enrollment process, is the cornerstone of Tricare. The purpose of this seminal case study is to detail the development and current status of Tricare Prime at MACH. A descriptive beneficiary survey was used to provide the commander with a current assessment of Tricare Prime enrollment. The overall response rate to the survey was 21%. A Pearson Product-Moment Coefficient ( $r$ ) correlation matrix was calculated for the 34 study variables. Significant positive relationships were found to exist between enrollment in Prime (dependent variable) and various other predictive variables to include: *Familiarity with the Tricare Program ; Receipt of a Tricare Briefing ; and Overall Satisfaction with Most Recent Visit to MACH*. A comparison of enrollees to nonenrollees revealed that enrollees expressed higher rates of familiarity with Tricare, higher rates of being presented with a Tricare briefing, were more satisfied with their last visit to MACH, and were more satisfied with MACH overall.

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## CHAPTER 1

### INTRODUCTION

#### Background

The cornerstone of the modern managed care organization, and in particular the health maintenance organization (HMO), is the beneficiary enrollment process. Those who enroll with a particular managed care plan or option sacrifice some degree of freedom of choice in exchange for receiving health care at a discount compared to traditional indemnity health insurance. Enrollment allows a managed care organization to manage the delivery and utilization of care for its enrolled populations. Beneficiary enrollment, along with network development, allows the managed care organization to implement the tools of managed care in an effort to improve access for its enrollees, monitor the quality of services, and control costs to the benefit of all parties.

The Department of Defense (DoD) has struggled for the past decade with how to cost-effectively provide the highest quality care to eligible beneficiaries of the Military Health Services System (MHSS). At the center of each DoD initiative has been the *beneficiary enrollment process*. The past decade has witnessed the rapid spread of managed care throughout the civilian health care sector. The DoD initially turned to the civilian sector in an effort to find a system to effectively manage the health care of its eligible beneficiaries.

A study by the RAND Corporation in June, 1984, was the first to discuss the feasibility of enrolling DoD eligible beneficiaries in some sort of managed care arrangement. The study examined the feasibility of a Health Enrollment System (HES) for DoD, replacing the DoD beneficiaries' ability to choose freely among

military and civilian health care options on a visit-by-visit basis. The study was mandated by Congress in an effort to improve the efficiency of the MHSS, lower overall costs, and raise the quality of care. The proposed HES would require the active duty to receive care primarily from a Military Medical Treatment Facility (MTF). All non-active duty would receive all of their care from either an MTF or from an alternative insurance arrangement, such as an HMO. All or part of the enrollment or insurance fees for the non-active duty would be paid for by the HES. Enrollment to a single source of care represented a change in the way health care was delivered to beneficiaries of the MHSS. Military beneficiaries traditionally had wide latitude over the choice of a provider. Whenever care was needed, a beneficiary could access the MTF if space were available, or make an appointment with a civilian physician. The HES would change this system. No longer could the beneficiary choose a source or system for care on a visit-by-visit basis (Phelps et al 1984).

For the next several years the DoD would authorize several demonstration projects in an effort to control rising costs. A common thread in these programs was the *enrollment process*, the process by which the beneficiary sacrifices some degree of freedom of choice for discounted health care. As a direct result of the RAND HES Study, DoD initiated its first managed care enrollment program in August, 1988. This program was known as CHAMPUS Reform Initiative or CRI.

Traditionally CHAMPUS, the Civilian Health and Medical Program of the Uniformed Services, provides the DoD-eligible beneficiary the option to receive care from civilian providers when space is not available in the MHSS, or because the beneficiary chooses to opt out of the MHSS. CHAMPUS offers discounted health care to beneficiaries who receive care from CHAMPUS providers, and users of CHAMPUS must meet a deductible and have copayments which vary according to the care received. In the early 1980s the costs of CHAMPUS were rising by over \$2

billion a year. In 1987, the DoD proposed a set of modifications to CHAMPUS in an effort to control its rapidly escalating costs. Congress required that the DoD conduct a demonstration project before initiating the program nation-wide. The demonstration project known as CRI was initiated in California and Hawaii in 1988 to control the dramatically rising costs of CHAMPUS (Hosek et al 1990). CRI, as implemented in Hawaii and California, altered the standard version of CHAMPUS in two ways. CRI placed a civilian health care contractor in charge of all health care for CHAMPUS-eligible beneficiaries in a defined geographic area. The contractor in turn received a fixed payment for providing all civilian health care to these beneficiaries. Second, the contractor operated under a risk-sharing arrangement with the government. This risk-sharing agreement allowed for an adjustment of the contract price for various circumstances. The contractor offered eligible beneficiaries the option to receive their health care through two new options: CHAMPUS Prime and CHAMPUS Extra (CBO 1993).

CHAMPUS Prime was similar to an HMO option. Beneficiaries who *enrolled* in Prime selected a primary care provider, and were required to receive or coordinate all of their care through this provider. The reward for enrollment in Prime was none or very small out-of-pocket costs for care coordinated through the primary care provider. CHAMPUS Extra was essentially a Preferred Provider Organization (PPO) plan. Those who enrolled in the PPO option could receive their care from a participating or non-participating provider. Participating providers agreed to care for CHAMPUS Extra enrollees at a discounted fee. So, enrollees receiving care from a participating provider received care at a reduced cost. Care from a non-participating provider was not discounted, and therefore cost the beneficiary more. But, Extra enrollees still paid more than Prime enrollees.

An evaluation of CRI compared the actual costs of CHAMPUS in California and Hawaii in 1988 to the CHAMPUS costs of CRI in the same areas in 1989. This

evaluation by the RAND Corporation revealed that administrative costs rose 4.6 percent, from \$111 million to \$116 million, off-setting a 9 percent decrease in claims costs. The largest decrease in claims costs occurred in outpatient mental health services, which decreased 34 percent. The RAND study determined that without CRI, the CHAMPUS costs in the demonstration area would have increased 22 percent. But, overall the RAND study concluded that no significant savings were achieved from CRI in Alaska and Hawaii (Hosek et al 1990).

A Congressional Budget Office (CBO) analysis of the RAND study made an interesting observation which may again appear as future military managed care projects are analyzed. The CBO found that the RAND study concealed significant differences between the costs of CHAMPUS Extra and CHAMPUS Prime. RAND found that Extra was a cost-effective supplement to the MHSS. *But*, the cost of providing Prime to enrollees was 57 percent higher than the costs of care in those areas where Prime was not available (CBO 1993). This significant increase is directly related to the greater discounts offered to enrollees, as well as the *enlarged benefit package* available only to enrollees.

While CRI flourished in California and Hawaii, the DoD initiated another demonstration project in 1989 known as Catchment Area Management or CAM. The purpose of CAM was to contain rising costs at the local level. CAM provided the local MTF commander the authority for managing the financing and delivery of health care services for all beneficiaries residing in the 40-mile radius catchment area. CAM provided the local commander direct control over both CHAMPUS and direct care system funds for all health services within the catchment area. There were five CAM sites throughout the MHSS (Kongstevdt 1993).

A common thread of all CAM sites was the *voluntary enrollment process*. Enrollment entitled the enrollee to reduced or eliminated deductibles and/or copayments. Rates were also discounted for inpatient services. Eligibility was

limited to CHAMPUS-eligible beneficiaries, who agreed to enroll for one year. Enrollees were also entitled to a variety of enhanced benefits which, like the copayments and deductibles, varied according to CAM site. Many of the enrollment incentives under CAM were similar to those under CRI, but they were presented or "packaged" differently. CAM was the second attempt by the DoD to manage the health care of eligible beneficiaries through the enrollment process (CBO 1991).

In January of 1992 the DoD sought to build upon the successes and lessons learned from CRI and CAM as it initiated the DoD Coordinated Care Program (CCP). The CCP was a DoD initiative designed to provide MTF commanders more authority and flexibility in both the delivery of health care to their beneficiaries and in meeting the medical readiness mission. The major components of the CCP included an: *enrollment program*, improved cost sharing incentives, a system of health care providers at the center of health care networks in each catchment area, and improved utilization management and quality assurance programs (ASD/HA 1992).

The CCP offered beneficiaries a choice of two options: enrollment in a managed care program similar to a civilian HMO, and a CHAMPUS benefit comparable to a civilian indemnity insurance plan. The HMO option required the CHAMPUS eligible beneficiary to *enroll* in the local MTF commander's health care network, and choose or be assigned to a primary care physician who served as the enrollee's gatekeeper to all health services. In exchange for freedom of choice, enrollment *guaranteed* the enrollee access to the MTF and a lower CHAMPUS deductible. Those who chose not to enroll maintained freedom of choice, but were not entitled to access to the MTF, with exception, and paid higher deductibles and copayments. Those not offered the opportunity to enroll, primarily medicare-eligibles and their dependents, could sign-up to receive care on a space-available basis (ASD/HA 1992).

While the DoD was implementing its CCP, the commanders of the Military MTFs in the Tidewater region of Virginia were directed to begin the implementation of their proposed tri-service CCP demonstration project known as Tricare. The Tidewater region of Virginia encompasses the following catchment areas: Naval Medical Center, Portsmouth; McDonald Army Community Hospital (MACH), Ft Eustis; and the First Medical Group, Langley Air Force Base (LAFB). The Tricare Tidewater Demonstration Project was a modification to Chapter 55, Title 10 of the U.S. Code and began on October 1, 1992. The Tricare program was intended to test a different method for financing and delivering health care services under CHAMPUS. Tricare was a tri-service coordinated care initiative under the direction of the Tidewater commanders, and administered by the Tricare Project Office (TPO). The Tricare program was responsible for the administration of all CHAMPUS dollars in the Tidewater region and was to last for three years (Tricare Project Office 1992). Tricare was built around four cornerstones: *an enrollment option*, a primary care case manager (later known as the primary care manager or PCM), the preferred provider network, and a comprehensive quality management program meant to balance the optimization of resources across the Tidewater region (ASD/HA 1993).

The demonstration project provided Title 10 beneficiaries three health care delivery options: an HMO option called the Preferred Plan (later known as Tricare Plus), a PPO network, and standard CHAMPUS called the Standard Plan. The Standard Plan was essentially the CHAMPUS program and was intended for those who chose not to enroll in the Preferred Plan or use the PPO. The PPO option was offered beginning on October 1, 1992. The PPO was established by a private contractor and provided a reduced cost-sharing for those who received care from the network of providers. The Preferred Plan was a *voluntary enrollment program* and was set to begin on April 1, 1993. The Preferred Plan was built around an

enrollment system and a primary care case manager (PCCM). Enrollment entitled beneficiaries to an enhanced benefit package, and significant cost reductions for care coordinated through the PCCM ( Tricare Project Office 1993).

During the implementation of the Tricare demonstration project in the fall of 1993, America found itself in the middle of a national health care reform debate. As a result of the national debate, the DoD announced a new plan on how it would coordinate change in the MHSS in conjunction with the President's Health Security Act. The President's Act resulted in the DoD establishing a system of military health plans covering broad regions. The MTF was the hub for health care in each geographic region. This new DoD initiative, adopting the name of the Tidewater demonstration project, was titled Tricare.

Congressional requirements guided DoD in the development of the new Tricare program and its two main goals: to provide a uniform benefit to all eligible military beneficiaries, and to bring health care spending under control. To meet these goals, the DoD has redesigned the MHSS in three main ways: introducing new methods of financing and delivery of care, building on the existing capacity of the MTFs, and introducing a new triple option (similar to the options introduced in the Tidewater Tricare Demonstration Project) (CBO 1995).

New methods of financing and delivery caused the DoD to divide the continental United States into 12 regions, as well as introduce capitated budgeting. To build on the existing MTF capacity, the DoD will contract for civilian health care resources in each region. When fully phased in, these contracts will change the CHAMPUS program by providing a network of local providers to augment the MTF. The triple option, Tricare Prime (the Uniform HMO Benefit), Standard, and Extra, offers a variety of incentives and rewards for beneficiaries. These rewards and incentives vary greatly and will be discussed in detail below. Tricare Prime, or the Uniform HMO Benefit, was *mandated* by section 731 of the National Defense

Authorization Act for Fiscal Year 1994. The Health Affairs "Policy Guidelines for Implementing Managed Care Reforms in the Military Health Services System", January, 1996, discusses the enrollment of Active-duty family members into Tricare Prime. This policy states that the enrollment of Active Duty family members is *central* to Tricare, and that Lead Agents should focus their marketing efforts so as to maximize family member enrollment (ASD/HA 1996). But, as in all previous managed care initiatives, Tricare again offers the beneficiary the *voluntary enrollment process*.

The recent history of the MHSS is the history of the evolution of the *voluntary enrollment process*. The enrollment process enables the local commander to best manage the care and costs of health care for those enrolled beneficiaries. The future of the MHSS may well depend on the effectiveness of local commanders in enrolling and maintaining enrollment in Tricare Prime.

#### Conditions Which Prompted The Study

McDonald Army Community Hospital (MACH) is part of the Tricare Mid-Atlantic Region 2 (TMAR2). TMAR2 is the home of the "original Tricare", in the form of the Tidewater Tricare Demonstration Project. The Tidewater Tricare Demonstration Project ended on October 1, 1995, and TMAR2 came into existence on the same day. TMAR2 extends the boundaries of the demonstration project to encompass the majority of Virginia and North Carolina. The Tricare implementation process and the awarding of the Managed Care Support Contract (MCSC) in TMAR2 is unique in that it builds upon the former demonstration project. The MCSC process in the 11 regions outside of TMAR2 is essentially an 8-step process. The process begins with the local MTF solidifying its internal direct-care efficiency. Next, the MTF looks to other local MTFs to maximize sharing of resources. The third step is the identification of required contractor support and the initiation of a

Request For Proposal (RFP) for that support. The fourth step is when the private contractor or contractors, based on the RFPs, essentially submit a bid for the regional MCSC. The fifth step is the evaluation of the bids. The sixth step is the awarding of the MCSC by the Department of Defense. The next step is when the winning contractor establishes service centers and health care finders, organizes the preferred provider network to support Tricare Prime and Extras, and enrolls beneficiaries into Tricare Prime. The final step is when the individual MTF assigns Prime enrollees to primary care panels or teams (MEDCOM 1995).

The Tricare implementation process in TMAR2 differs in the following ways. The Tricare Demonstration Project has taken the Tidewater MTFs and their beneficiaries through the following steps of the MCSC process: step 1- solidify internal capacity; step 2- maximize local resource sharing with other MTFs; step 7 - the contractor establishes service centers and health care finders, organizes the PPO to support Tricare Prime and extra, and enrolls into Prime; and step 8- enrollment to primary care panels or teams. Active duty military families located in the Tidewater region of TMAR2 currently have the choice among Tricare's triple-option. The difference is that these options were developed outside the realm of the MCSC and were implemented over several years beginning in October, 1992 . The MCSC is scheduled to be awarded in TMAR2 in early FY97 with a start date of September, 1997. The current Prime and Standard options should seem the same to beneficiaries after the implementation of the MCSC. But, the network ( Tricare Extra), and certain aspects of the service center and health care finders, which were developed by the current contractor, might either be absorbed in some fashion or totally abolished by the MCSC contractor. The contractor who assisted in the development of the Tidewater triple option during the Demonstration Project might not be the contractor who is awarded the MCSC, so some changes may occur.

Tricare Standard or Standard CHAMPUS was always available as an option in Region 2. Tricare Extra or the Preferred Provider Organization Option was initially offered in TMAR2 on October 1, 1992, and offers discounts over Tricare Standard for care received from a local network of preferred providers. Tricare Prime is the Health Maintenance Organization Option of Tricare (for a cost comparison of the triple option, see Appendix A). This HMO option was initially known in Tidewater as the Preferred Plan, later as Tricare Plus, then finally as Tricare Prime. There is no enrollment process for either Standard or Extra, while Prime requires the active duty service member to enroll his or her family members and select a primary care manager (PCM) site for the family. Tricare Prime enrollment was initially offered for family members of those in the grade of E1 through E4 in April of 1993. The remaining active duty family members were phased-in through October 1, 1995, when the entire active duty population could enroll their family members (ASD/HA 1993). The Tidewater region has 10 Tricare PCM sites (see Appendix B), each with a limited enrollment capacity. Sentara Health Systems, a private civilian contractor, manages 8 out of 10 sites. McDonald Army Community Hospital and Langley Air Force Base each manage a Tricare Prime site in their respective Medical Treatment Facility (MTF)(TMAR2 1995).

McDonald Army Community Hospital is unique in Tidewater in that it has two Tricare Prime PCM sites located within its walls: a 1st floor PCM site, known as MACH "Prime" 1; and a 3rd floor PCM site, known as Tricare Prime Clinic, Fort Eustis. The 1st floor PCM site is staffed and operated by the MACH commander, while the 3rd floor PCM site is staffed and operated by Sentara Health Systems with oversight by the MACH commander. The 3rd floor PCM site is GOCO, or government owned/contractor-operated clinic. Sentara subcontracts the operation and staffing of the 3rd floor Tricare Prime Clinic with a group known as PHP Healthcare Corporation.

Tricare Prime is the cornerstone of the Tricare for several reasons. First, it is the most cost-effective health care option for active duty family members. Prime has no enrollment fee, deductible, or copayments for the families of active duty personnel. Prime enrollees agree to receive their primary care at their enrolled PCM site. As long as Prime enrollees stay within the military system, there is no cost (see Appendix A). If the family members are forced to seek care outside of the military system, they are provided a care authorization. This authorization allows them to purchase services at a cost substantially cheaper than under Standard or Extra (see Appendix C). Second, Prime enrollment entitles enrollees to an enhanced benefit package (see Appendix D) not offered to non-enrollees. Finally, Prime enrollment provides local commanders the greatest opportunity to *manage* the health care of enrolled populations. Alternative, also known as revised, financing methodologies now under consideration will allow commanders to recapture and manage CHAMPUS dollars per enrolled Prime family member. Tricare Prime also presents a level of risk for active duty service members, their families, and the MTF commander.

Tricare Prime is simply the best financial buy for the active duty population. In spite of this fact, the active duty population has not responded in overwhelming numbers to enroll their family members in Tricare Prime. McDonald Army Community Hospital has a capacity of 13,338 at its 1st floor PCM and a capacity of 18,000 at its 3rd floor PCM. This makes MACH's current capacity 31,338. The capacity at the 1st floor PCM is divided into an adult clinic with an enrollment capacity of 9,909, and a pediatric clinic with a capacity 3,429 (MACH Resource Management Division 1996). This dual enrollment is a result of MACH's staffing. The 1st floor PCM has only 1 family practitioner, with the remaining providers being general medical officers (GMOs) and pediatricians. The division of adults and children allows for the best utilization of resources. Also, the word *current* was used

in relation to MACH's capacity because the capacity of either the adult or pediatric clinics may be expanded if necessary. The 3rd floor PCM has an enrollment goal of 8,000 by September 1, 1996, and expects to reach its capacity by September, 1997 (TMAR2 1996).

There are approximately 49,000 eligible beneficiaries in the MACH catchment area with approximately 7,500 of these being permanent party active duty. Only about 5,500 of these active duty will be enrolled at MACH. These active duty are automatically enrolled to the 1st floor PCM site. This leaves approximately 25,838 Prime enrollment slots for the remaining 41,500 eligible beneficiaries in the MACH catchment area (DMIS 1996). As of May 15, 1996, enrollment at the 1st floor PCM totaled 10,572, while the 3rd floor PCM enrollment was 3,841. This means MACH's total was about 14,413 or 46 percent of its capacity. Also, only approximately 8,900 of 20,000 (44 percent) eligible active duty family members were enrolled. For a summary of MACH enrollment capacity see Appendix J (MACH Resource Management Division 1996).

Those active duty who hesitate to enroll their families are at risk in several ways. First, their families' choice of PCM site may be limited if a particular PCM site is enrolled to its maximum. If they want to enroll, they may have to enroll at a PCM site which is not the most convenient. As of March 1, 1996, several Tidewater area PCM sites have already reached their capacity and closed enrollment (see Appendix B). Second, if they fail to enroll, they will never be "locked out" of the primary care system, but may be forced to compete for a shrinking number of primary care appointments allotted for non-enrollees. Finally, non-enrollment may force family members to use the costly Standard or Extra options.

The MTF commander is at risk in several ways. Tricare has forced the commander to define his primary care capacity. Enrollment gives the commander the opportunity to manage the care of family members. Non-enrollment means less

control for the commander, particularly of CHAMPUS dollars. The commander is currently funded for the entire catchment area beneficiary population with some adjustments for utilization. The most effective way to control costs, especially CHAMPUS, is for the commander to manage the care of his entire beneficiary population through a PCM site. Future capitation formulas will capitate the commander based on the MTF's enrolled beneficiary population. Unfortunately, the commander may not have the capacity to manage the entire beneficiary population. The Managed Care Support Contract for TMAR2 is currently being negotiated, and is expected to be in place some time in FY 1997. Those who bid on this contract will bid to provide care for CHAMPUS-eligible beneficiaries not enrolled to one of MACH's Tricare Prime sites. In addition to capitation, Transfer Payment Policy and Alternative Financing represent risks to the commander.

Transfer Payment Policy (TPP) requires the commander to transfer funds in exchange for services received by his beneficiaries at other medical facilities. A historical baseline of prior referrals and utilization is established for each commands' utilization of other facilities (ASD/HA 1995). For instance, McDonald Army Community Hospital frequently refers members of its catchment area beneficiary population to Portsmouth Naval Medical Center for tertiary services. There was formerly no charge for these services. Under TPP, Portsmouth will be funded for MACH's beneficiaries historical utilization of its services. But, if MACH were to exceed these historical levels, then MACH is required to transfer funds to pay for the excess utilization.

Alternative or revised financing allows the commander to recapture and manage CHAMPUS dollars for each Prime enrollee. Alternative financing puts the commander at risk for care received outside of the MTF, but it also allows the commander to manage CHAMPUS dollars and provides the commander with a source of potential revenue if sound management occurs (ASD/HA 1995). The

fewer the enrollees below the maximum capacity, the less CHAMPUS dollars for the commander to manage. Also, under the current situation, lower than maximum enrollment means less control over a larger part of the beneficiary population. This may possibly result in higher CHAMPUS costs for the command. Transfer Payment Policy and Alternative Financing both represent significant risks for the MTF commander.

It is in the interest of the Commander, McDonald Army Community Hospital, to know what has influenced certain beneficiaries to enroll in Tricare Prime. Knowing and understanding these factors will allow the commander to develop a marketing plan to maximize enrollment and then maintain maximum enrollment. This knowledge will allow the commander to provide cost-effective health to the largest portion of the beneficiary population.

#### The Management Problem

The management problem for the Commander, McDonald Army Community Hospital, is how to maximize and maintain Tricare Prime enrollment in a continuously changing environment. Active duty military family members represent the largest portion of all eligible beneficiaries in the MACH catchment area (see Appendix F). In order for the commander to maximize enrollment in Tricare Prime, the commander must identify and understand the factors which may influence active duty families to enroll in Tricare Prime.

#### Literature Review

Tricare offers the active duty military family the choice between several types of managed health plans: Tricare Prime is the health maintenance organization option, Tricare Extra is the Preferred Provider Organization-like option, and Tricare Standard is regular CHAMPUS with a list of CHAMPUS-approved providers. A

review of the literature yielded a baseline analysis of access and satisfaction with the Tricare Program in the Tidewater region. The literature yielded no studies which specifically examined factors which influenced active duty military families to choose Tricare Prime, or focused on Prime enrollment. However, the literature review revealed many studies performed in both the military and civilian health care sectors which discuss factors and predictors influencing enrollment, re-enrollment and disenrollment in HMOs and other managed care health plans.

It is very important to consider the spectrum of enrollment decisions (enrollment, disenrollment, and reenrollment) when considering Tricare Prime enrollment for military families. The Tricare Prime enrollment process must be viewed from several different perspectives when considering the military family. For new military families, Tricare Prime enrollment may reflect their first health care selection decision. These families are likely to be influenced by a basic set of cost and access factors which might influence their enrollment decision. Families with experience in the MHSS are also likely to be influenced by cost and access questions, but their decision might also be influenced by their past experience with the MHSS. For experienced families, their initial enrollment may be viewed as a vote of confidence in that they are being asked to show their past and present satisfaction with the MHSS by choosing to enroll. While other experienced MHSS families who are dissatisfied with past experiences in the MHSS may decide not to choose Prime (or disenroll from the MHSS), and may choose Tricare Extra, the PPO option, or Tricare Standard.

#### Consumers Knowledge About Their Health Care Coverage

In a 1993 article in Hospitals & Health Networks, Renee Blankenau stated that consumers are often confused about their health coverage due to the lack of information provided to them. Employees often lack comparative data on plan

quality, efficiency, and other factors used to determine premiums. But, when it comes right down to it, cost is always the most significant factor in plan selection. She sighted a policy instituted at the Xerox Corporation in which employees were essentially penalized and required to pay a larger copayment for their care when they chose to use any indemnity coverage over HMO options offered by Xerox. In fact, the costs of the indemnity coverage were compared to the most efficient among several HMOs under contract with Xerox. Xerox provided its employees with an alternative that would save money for both employees and employer. Its tactics were to hit the employees in the pocket-book if they chose not to use any of the contracted HMOs. In the first year of this policy, 7,000 employees switched to efficient HMOs.

Garnick, et al, (1993) also examined how well people understand the basic provisions of their health plans. They examined three surveys conducted by the Bureau of Labor Statistics in 1989 and 1990. The authors found consumers to be knowledgeable about some aspects of their coverage and uninformed about other aspects. Over 80 percent of respondents correctly identified that they had coverage for hospitalization and doctor's visits, while less than 54 percent were not sure if their plans covered mental health and alcohol/drug abuse services. The lack of a basic understanding of health coverage has serious implications when consumers are expected to shop for the best and most cost effective health care.

#### Studies of Enrollment in Military Managed Care Programs

The first reported evaluation of MHSS beneficiary enrollment patterns in managed care plans occurred in a CBO evaluation of the CAM Demonstrations. Three of the five CAM programs (Phoenix, Austin, and Fort Sill) offered a restrictive

enrollment approach. Beneficiaries who enrolled in these programs were required to receive all of their care from either the military or civilian network provider. If care was received outside the civilian network, the beneficiary was required to pay the entire bill. Beneficiaries at these three restrictive sites could enroll or disenroll at any time during the year. The Air Force commander in Austin required members who dropped out to wait 6 months before re-enrolling. The CAM site in Phoenix required that beneficiaries have a permanent residence in the catchment area for nine months before being eligible to participate (CBO 1991).

The commander at Fort Carson also offered a restrictive enrollment, but this enrollment was narrow in focus. All CHAMPUS eligible beneficiaries were eligible for the Fort Carson enrollment program. The difference was that the commander focused on those who had previously used CHAMPUS. Only those who had previously filed a CHAMPUS claim during the past year was included in a direct mailing advertising the program (CBO 1991).

In Charleston, SC, the Navy offered a less restrictive enrollment program known as CAMCHAS Prime. The Navy still expected enrollees to receive care from either the military or the civilian network. The Navy shared the cost for out-of-network care, and did not penalize those who went outside the network as harshly as other CAM sites (CBO 1991).

The CBO listed two advantages for the restrictive approach used by the Air Force and at Fort Sill. By restricting choice, the local commander could more easily collect beneficiary data. And by enrolling as many as possible, the commander

could get a better estimate handle on the demand for care, and increase the ability to improve the planning and budgeting process. The advantage of the very restrictive model at Fort Carson was that it reduced the risks of enrolling too many beneficiaries. The Navy's unrestrictive approach allows for more freedom of choice, but may hurt the local commander's ability to plan and budget (CBO 1991).

An evaluation of the CHAMPUS Reform Initiative (CRI) was performed by the RAND Corporation in 1993 (Hosek et al 1993). The RAND evaluation focused on active-duty spouses, and retirees and their spouses. The study revealed in 1992, four years into the program, that the enrollment rate was 20 percent overall and about 28 percent for active-duty dependents. The RAND study compared these enrollment rates to civilian sector. In 1989, 35 percent of all civilian employees with an HMO option were enrolled in an HMO. Overall, 17 percent of all employees were enrolled in HMOs. Thus, the penetration rate for CRI Prime was very high (Hosek et al 1993).

The study found no significant differences in enrollment of active-duty spouses based on rank or race, but found that the enrollment rate was higher among women. The study also revealed that enrollees and non-enrollees differed in their economic circumstances. Active-duty spouses who were employed full-time, and therefore likely to have some other form of insurance, were less likely to enroll (Hosek et al 1993).

### Factors Influencing Enrollment In Managed Care Plans

Berki and Ashcraft (1980) performed an extensive review of the relevant literature in determining who joins which HMO and why. The authors believed that the requirement of free choice among many alternative plans, with varying benefit packages and provider systems, indicates that the decision to enroll in a given plan must be considered in the framework of choice behavior. Choice behavior assumes that the informed individual is the best judge of which plan is likely to yield the highest level of satisfaction for self and/or family members. The authors argue that the assumption of individual choice is an important one. Past questions of enrollment focused on who joined, but today researchers must focus not only on who joins, but what kind of HMO and why. The authors further argue that the enrollment decision is very complex and can best be examined in the context of the following theoretical model (see Figure 1):

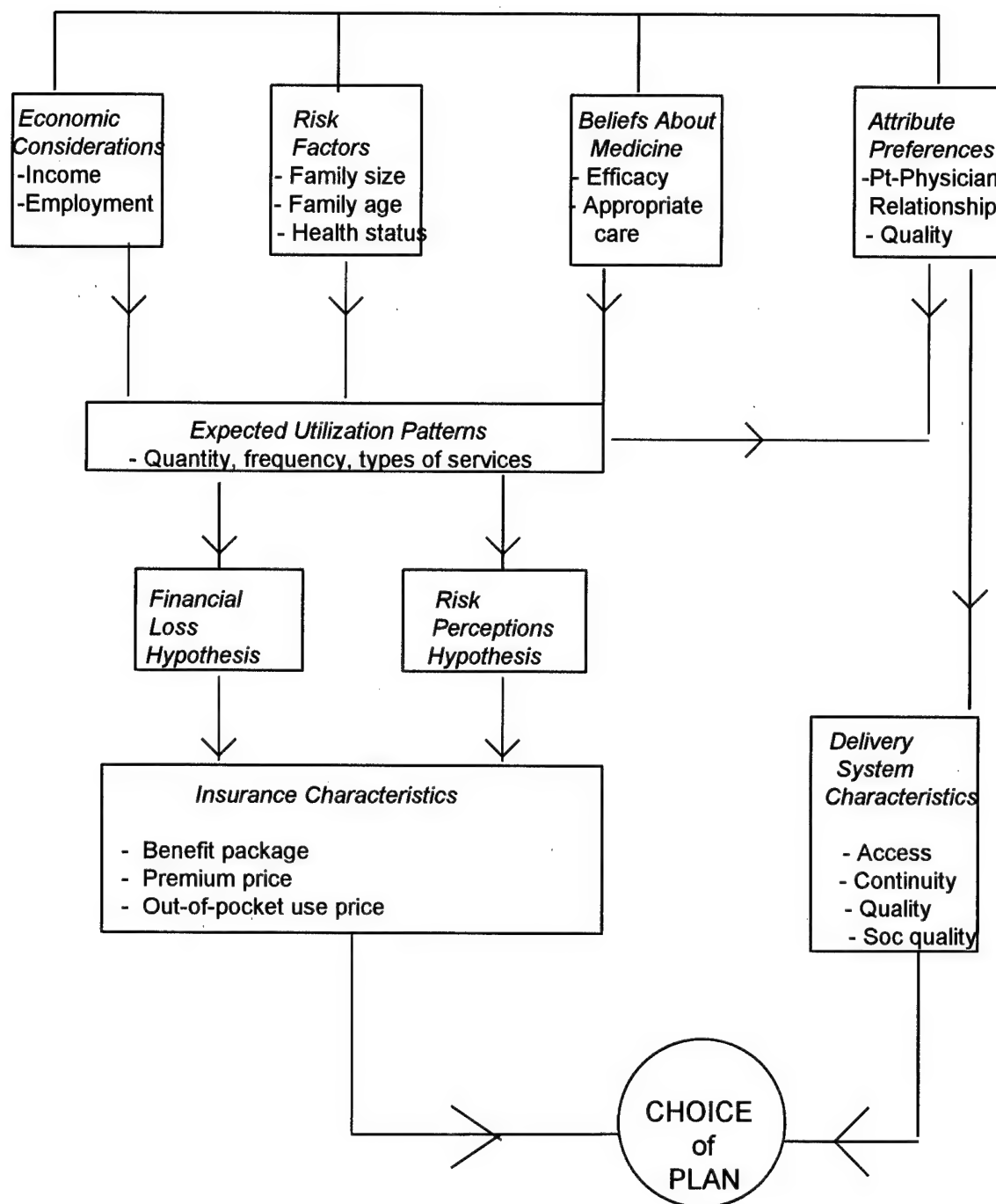


Figure 1

Framework for analysis of enrollment decisions (Berki & Ashcraft 1980).

The authors state that enrollment is a simultaneous choice of both insurance coverage and its associated cost, and a delivery system. Their model clearly depicts that the selection of insurance coverage is a multi-step and very complex process. This process considers economics, personal risk factors, beliefs, and personal preferences. A summary of the authors' review of the literature found that an HMO's ability to attract enrollees depends on its ability to both offer insurance and a delivery system that is desirable to consumers.

An examination of self-selection in the choice of health coverage was performed by Strumwasser, et al. They examined what influenced consumers in the selection of health coverage when presented with the choice between three plan options: traditional Blue Cross and Blue Shield, an HMO, or a PPO. Members were presented with the option of staying with the Blues or switching to either an HMO or PPO plan. The authors found that members who switched to HMOs or PPOs were generally younger, indicating that *lower cost members* were attracted to the HMOs and PPOs. In their study, nearly 48 percent of 48,379 members studied switched coverage. Further their study found that self-selection among younger members ( age groups <19, 19-25, 26-35, and 36-45) was particularly favorable to the HMOs (Strumwasser et al 1989).

Mechanic, Ettel, and Davis examined new employees choice patterns when choosing among several health insurance options. These options included selecting traditional Blue Cross and Blue Shield (BC & BS) or an HMO. The authors study sample was a group of 296 new university employees. The authors found that those who chose traditional BC & BS attributed their choice to freedom of choice of physician. While those choosing the HMO option gave a higher priority to *cost* considerations. Overall, those who selected BC & BS were willing to pay more to avoid changing physicians (Mechanic et al 1990).

Barbara Weiss reported in the March 15, 1995, issue of Medical Economics that despite the cost containment advantages of strict HMO models, that consumers continue to place a high value on choosing their physician. She stated that the PPO is currently the "powerhouse of managed care, outpacing the growth of HMOs from 1987 to 1993. She argued that the real difference in cost savings between HMOs and PPOs was about 1 percent.

An article in the Summer, 1995 issue of Health Affairs echoed the fact that *cost* is the most significant factor in choosing a managed care plan over fee-for-service options. Davis, Collins, Schoen, and Morris (1995) analyzed the 1994 Commonwealth Fund Managed Care Survey. They found that 31 percent of managed care plan enrollees listed cost as their main reason for their choice of one plan over another, while 18 percent of fee-for-service enrollees considered cost decisive. The authors also found that as a group, managed care enrollees are *younger* and have *lower levels of income* and education than fee-for-service enrollees who had an option to join some sort of managed care health plan. The authors stated that the higher percentage of younger families in managed care plans may reflect the fact that they are less likely to have an established relationship with a particular physician. Younger families were likely to have less income and be more *sensitive to out-of-pocket costs*. Also, younger families were more likely to be in the child-bearing years, and would naturally enroll in the managed care plan with its more comprehensive preventive benefit package. Several studies have examined factors which may cause consumers to either disenroll from a current health plan, switch health plans, or both.

#### Factors Influencing Disenrollment From a Managed Care Plan

Weiss and Senf (1990) explored what factors/perceptions would cause HMO enrollees to change plans during a period of open-enrollment. In their study 189 (8

percent) of the 2,365 subjects elected to change health plans. Their study shows what expectations are important to consumers, and if not met, may cause a switch in health insurance. They found the following reasons as major predictors of health plan switching: desiring a specific physician who worked with another plan (23.2 percent), the quality of care was perceived to be inadequate (17.0 percent), cost (10.7 percent), services covered were not adequate (9.8 percent), continuity of care not adequate (10 percent), current plan lacked concern for patients (8 percent), difficult to get appointments (5.4 percent), difficult to get referrals to specialists/consultants (5.4 percent).

Studies have also examined the specific effect of economic decisions on disenrollment. Long, Settle, and Wrightson (1988) found that disenrollments from three Minneapolis-St. Paul HMOs were largely a function of economic factors. They developed an economic hypothesis that disenrollment rates are affected by changes in premiums, or that in general, consumers respond to economic incentives. Their hypothesis expanded on the earlier works of Hennelly and Boxerman (1983), and Mechanic, Weiss, and Clearly (1983), who hypothesized that specific characteristics of an HMO may influence disenrollment rates. Long, Settle, and Wrightson found that disenrollments rose significantly with increases in premiums, as well as when the number of plan choices available increased. The authors confirmed their economic hypothesis that disenrollment rates are affected by changes in plan premiums. A \$5.00 increase in plan premiums raised the predicted disenrollment rate by 66.7 percent, or from 41.8 to 69.7 subscribers per 1000.

Sofaer and Hurwicz (1993) found that given the absence of significant financial differences among HMOs, loyalty among HMO Medicare beneficiaries is to their specific provider, rather than to the HMO. When a HMO terminated its relationship with a major medical group, who in turn contracted with a competitor, nearly 60 percent of 811 study participants switched to the competitor, and only 25

percent remained with the initial HMO. These results highlight the *role of the provider* in maintaining beneficiary loyalty to the HMO.

Wersinger and Sorensen examined the reasons for disenrollment from a Rochester, New York, HMO immediately following a premium rate increase. They found the most frequent reasons cited for disenrollment in a survey following the increase were: cost, dissatisfaction with service, and change in eligibility. About 42 percent of disenrollees during the increase cited cost, compared to 24 percent who cited cost as a reason for disenrollment during non-increase months. The dissatisfaction rate among increase months was about the same (24.3 percent) when compared to non-increase months (23.7 percent). The disenrollments due to changes in eligibility were due largely to changes in employer, marital status and moving households out of the area (Wersinger 1982).

#### Demographics of Enrollees in HMOs

Taylor, Beauregard, and Vistnes (1995) highlighted the socio-demographic characteristics of HMO enrollees in the September 1995 issue of Medical Care and Review. The authors used data from the *1987 National Medical Expenditures Survey*. The authors' hypothesis is that HMOs reduce costs because they enroll healthier (i.e., younger) populations than fee-for-service plans. A possible explanation for this is that HMOs attract families who are planning and having children. These families are concerned with good maternity benefits and preventive services for children, and so are inclined to join HMOs which often have lower out-of-pocket costs for these benefits. The authors also found that families enrolled in HMOs were more likely to have 2 or 3 children under the age of 19 than those enrolled in fee-for-service plans. These findings confirmed the results of previous studies (Berki & Ashcraft 1980, and Welch and Frank 1986).

## Patient Satisfaction as a Predictor of Enrollment or Reenrollment

Ware, Davies and Stewart (1977) were some of the first to discuss the role of patient satisfaction as an independent variable to predict consumer behavior. The authors discuss the role of satisfaction as a dependent variable to evaluate provider services, and facilities. This use of satisfaction is based on the assumption that satisfaction is an indicator of some structure, process, or outcome. Satisfaction also has a role as an independent variable. Satisfaction as an independent variable is based on the assumption that differences in satisfaction influence what people do, or specifically, why they chose one option over another.

In a related longitudinal study, Marquis, Davies, and Ware (1982) found that patient satisfaction does predict subsequent changes in providers. The authors found that 66 percent of those who expressed the least satisfaction changed providers, while only 42 percent of the most satisfied patients switched providers. The authors confirmed their working hypothesis that provider continuity is directly related to or is a behavioral consequence of patient satisfaction.

Scotti, Bonner, and Wiman (1986) recognized that an HMO's survival is above all dependent on its ability to enroll and retain enrollment. They stated that an organization's marketing effort should have two focuses: to attract new members and to retain current enrollees. The authors sought to assist HMO administrators, and ultimately organizational marketers, by identifying the factors which influenced the decision to reenroll. The authors postulated that the decision to enroll is primarily an economic decision. The authors surveyed current members of an HMO

using a survey instrument containing socio-demographic, behavioral, attitudinal and patient satisfaction questions. The respondents were asked to register their satisfaction using a five-point Likert-type scale. The respondents were also asked whether or not they would stay enrolled. A correlation matrix was prepared for the 23 satisfaction attributes tested. The authors employed a factor analysis to reduce the number of factors, and finally employed a stepwise analysis grouped on the basis of whether the respondent would or would not reenroll. They extracted six satisfaction factors: quality of care, cost/benefit, routine access, emergency access, accommodation and location. The authors found that quality and cost/benefit decisions are paramount to the reenrollment decision. Their work confirmed the earlier findings of Berki and Ashcraft (1978) as to the importance of economic decision in the selection of a prepaid health care option.

The link between satisfaction and re-enrollment was studied by McCormick (1991). The purpose of her study was to describe the antecedents of HMO satisfaction and reenrollment within the concept of the expectation-performance theory. The author used two survey instruments, and surveyed expectations of 568 respondents before enrollment and again after the respondents had experience with the HMO. She used factor analysis to build 16 multi-item sub-scales which measured insurance and delivery expectation, contemporary experience, and satisfaction. She used logistic regression to determine the relationship of reenrollment to its antecedents. The author found that re-enrollment was directly

predicted by satisfaction and contemporary experience. She developed a model to predict reenrollment as a function of satisfaction (see Figure 2 ).

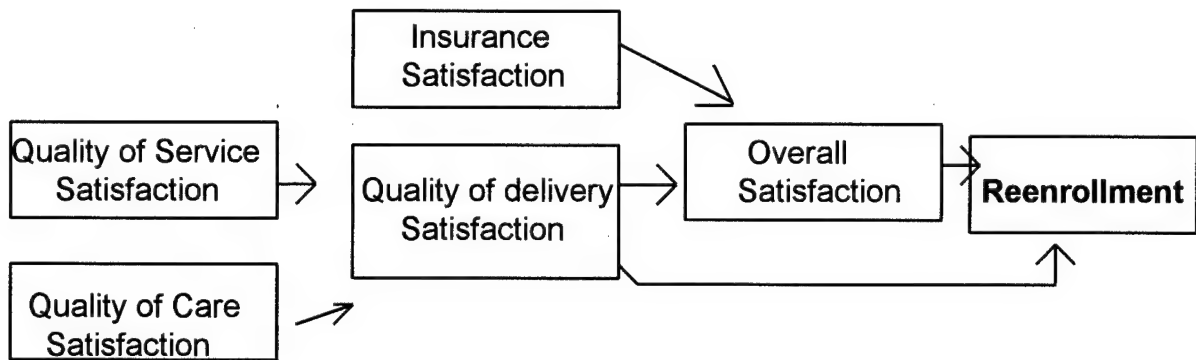


Figure 2

The reenrollment decision considering patient satisfaction (McCormick 1991).

### Surveying Techniques

Hall (1995) examined the differences in mail and telephone patient satisfaction survey results. The author was testing the hypothesis that responses to patient satisfaction surveys may vary by delivery method. This hypothesis was based on the previous works of Noyes (1973), and Walker and Restuccia (1984). Noyes found that the telephone interviewer inhibited free response. Walker and Restuccia found that telephone surveys resulted in an acquiescence response bias, that is, the tendency for respondents to give the socially correct answer.

Hall delivered his patient satisfaction survey via telephone using Independent Market Research, a telephone marketing firm. The survey was also delivered via U.S. Mail. There were no significant demographic differences in the two survey

samples. The author found significant differences based on the survey delivery technique. He found that patients contacted by phone are less likely to criticize a hospital than those who responded to a self-administered survey. This fact suggested that the loss of anonymity influenced a patient's responses. This also confirmed the earlier studies, mentioned above, that suggested that an interviewer may induce more positive responses. The author found that the telephone also generated a 7 percent higher response rate, but cost more to administer. These facts create some serious considerations for health care administrators and marketers when considering the use and delivery of patient satisfaction surveys.

Dommeyer, Feldman, and Davis (1995) examined how various forms of the self-administered survey affect response rates and attitudes. They examined two types of self-administered surveys: a waiting room survey, and a mail survey. They had two working hypotheses: the rate of response will be higher for the waiting room survey than for the mail survey; and waiting room respondents will be more likely than mail survey respondents to express favorable attitudes towards the medical facility. In general, the authors found that waiting room surveys produced a higher rate and speed of response, and resulted in patients with higher levels of satisfaction. The waiting room response rate was 56 percent compared to 14 percent for the mail survey. Waiting room respondents were also more satisfied with 9 of 10 features of a recent visit when compared to those who responded to a mail survey.

### Purpose

The purpose of this seminal case study is to detail the development and current status of Tricare Prime enrollment at McDonald Army Community Hospital. A descriptive patient survey is used to provide the MACH commander with the current assessment of Tricare Prime. This survey will attempt to identify any predictor variables which are significantly related to Tricare Prime enrollment (the dependent variable). A literature review was conducted to identify potential predictor variables and develop several working hypotheses for this study. A Pearson Product-Moment Coefficient ( $r$ ) correlation matrix will be calculated to identify variables which warrant further study as potential predictors of Tricare Prime enrollment. This study will assist the commander, McDonald Army Community Hospital, in focusing the organization's efforts on a specific number of variables/factors which are known to influence enrollment. These variables can be used to focus organizational marketing efforts in the quest for new enrollees, and in the retention of current enrollees.

## CHAPTER 2

### METHODS AND PROCEDURES

#### Methodology

The research method chosen for this project is a case study. This case study is both explanatory and descriptive in nature. The case study focuses on Tricare Prime enrollment at McDonald Army Community Hospital (MACH), and seeks to explain the evolution of the voluntary enrollment at MACH, culminating with Tricare Prime. This study also employs a descriptive beneficiary survey as discussed by Leedy (1989). This survey will assess the current status of Tricare Prime enrollment at MACH. The beneficiary survey is becoming a popular tool for health maintenance organizations throughout the United States. Two examples in use are "The Group Health Association of America Consumer Satisfaction Survey" (1991) and "The HMO Group Satisfaction Survey" (1995). These surveys are widely employed throughout the managed health care sector to assess patient attitudes, and satisfaction.

#### Data Collection

"The McDonald Army Community Hospital Beneficiary Survey" (Appendix G) is divided into four parts: Part I (Demographics); Part II (Tricare & Health Care Coverage); Part III (Satisfaction with Most Recent Visit to MACH); Part IV (Overall Satisfaction Questions Pertaining to MACH). The survey (minus Part II, questions 1,2,4 and 5) was adapted in its entirety from "The Health Care Evaluation Survey, Adult Questionnaire" (1991). "The Health Care Evaluation Survey" was developed by the Center for Naval Analyses (CNA). Part II, questions 1,2,3, and 5 are also

adapted from the CNA survey, but were tailored to specifically reflect the Tricare Prime program. The entire survey was reviewed for validity by Dr. Peter Stoloff, Center for Naval Analyses. Dr. Stoloff is a researcher with the CNA and assisted in the development of "The Health Care Evaluation Survey".

### Population and Sample

The population for this survey is all active duty military families residing in the MACH catchment area. There are approximately 5,372 active duty with family members residing in the MACH catchment area (Appendix E) (DEERS POPDB 1995). These service members have a total of nearly 20,000 family members (Appendix F) (DMIS 1996). Active duty military families was chosen as the focus of this project for several reasons. First, certain subgroups within the active duty family population, mainly those in the rank of E4 and below, have the most to lose by not enrolling in Tricare Prime. Those E4 and below beneficiaries have the least flexibility in their personal finances. The use of Tricare Standard and Tricare Extra would cost them money which they may not have, or may cause them to make difficult choices. Second, Tricare is being heralded as a quality of life issue for active duty families. This fact was echoed by ADM. Mike Boorda, Chief of Naval Operations (CNO), at the recent Tricare Conference in Washington, DC. Soldiers, sailors and airman will perform in both routine assignments and in combat if and only if they are confident that their families are being taken care of, i.e., having access to the highest quality medical care. Quality health care, suitable housing, well-stocked exchanges and commissaries are all part of the quality of life issue. The CNO stated that the Joint Chiefs of Staff supported Tricare because they believed that it is an essential quality of life issue for military families (Boorda 1996). Tricare will cease to exist if it does not convince active duty families that it is the best health care option for their families.

The list of active duty families was generated through the Composite Health Care System (CHCS), and was sorted based on active duty sponsor SSN and rank.

### Sample Development

A review of the CNA report, Sampling Plan for Tricare Evaluation, guided the researcher in the development of the sample for this project. Based on the CNA report, the sample for this survey will be stratified based on pay grade of sponsor (E-4 and below, E5 and above), sponsor or spouse, and enrolled and not enrolled.

To minimize the burden on each family, only one adult will be selected per family. The CNA used the following criteria to select the number of people for each stratum :

- anticipated response rate
- number of usable responses
- sensitivity of statistical procedures to be used to detect differences in outcomes (Stoloff 1993).

Based on previous response rates for other surveys of military health care beneficiaries, the CNA estimated the overall response rate for military-family focused surveys to be 50 percent , with the response rate for certain strata (E4 and below) being as low as 19 percent (Stoloff 1993). This researcher intended to survey as large a sample as financial constraints would allow. Several methods were employed to ensure a high response rate. These methods included a survey announcement in the local military newspaper (Appendix H), as well as a letter from the MACH commander (Appendix I) urging participation in this survey. The stratified sample is as follows:

#### Beneficiary Status

junior enlisted (E4 and below)

spouses of junior enlisted  
 senior active duty (E5 and above)  
 spouses of senior active duty

Enrollment status

Enrolled  
 Not enrolled

The actual stratified sample is:

TABLE 1 - The Stratified Sample

	E4 & Below	Spouses E4	Senior AD	Spouses senior
Enrolled	250	250	250	250
Not Enroll	250	250	250	250

The Pilot Survey

Forty surveys were randomly hand delivered throughout MACH in January, 1996. The criterion for selection was that the participants were active duty or spouses of active duty. The respondents were asked to complete the survey and participate in a post-survey interview, or to complete the survey and return it via U.S. Mail. A total of 31 surveys were returned, with 12 post-survey interviews conducted. The interview process was meant to detect any shortcomings or unintentional biases in the survey. Several minor modifications were made to the survey as a result of the interviews. Most significant was the addition of the variable gender to the survey, and the elimination of repetitive questions in Parts III and IV. The pilot survey also found enrollment to have a significant relationship with the following variables at alpha level = .05: Familiarity with Tricare (familiar) ( $r = .63$ ,

$p < .01$ ), Did you receive a Tricare briefing - Yes ( $r = .48$ ,  $p < .01$ ), and Overall Satisfaction with the most recent visit (*satisfied*) ( $r = .51$ ,  $p < .01$ ).

#### The McDonald Army Community Hospital Beneficiary Survey

A public service announcement in the March 22, 1996, addition of the Wheel, the Fort Eustis military newspaper, announced the "MACH Beneficiary Survey" (see Appendix H). The survey was mailed to the sample during the week of March 25, 1996, with a requested return date of not later than April 11, 1996. The survey was accompanied by a letter from the MACH commander urging the potential respondent to participate (See Appendix I).

The respondents were told to return the survey either through the U.S. Mail with an enclosed postage-paid envelope, or by dropping the survey in one of the patient survey boxes located throughout the hospital.

#### Statistical Analysis

The purpose of the descriptive survey is to highlight any significant relationships which might exist between enrollment (enrollees) in Tricare Prime and various other variables contained in the survey. To a limited extent, certain significant relationships between nonenrollment (nonenrollees) and the various other study variables will also be examined. A Pearson Product-Moment Coefficient ( $r$ ) correlation matrix will be developed to test the significance of the relationship of any of the predictor variables to the dependent variables ( $Y$  = enrolled or nonenrolled). Pearson's ( $r$ ) is a widely used statistic for measuring the relationship between two sets of scores (Sommer & Sommer 1991). As a statistical test, Pearson's ( $r$ ) has limitations, and is used mainly to identify significant relationships for more advanced statistical tests. Those independent or predictor variables which are calculated to have a significant relationship with the *enrolled* or *not enrolled*

(dependent variables) at an alpha level of at least  $p < .05$  will be examined in the Results and Discussion portions of this study. Descriptive statistics for all variables, as well as frequency charts will also be calculated. The descriptive statistics and frequency charts will also be examined in the Results and Discussion portions of this paper.

This is a seminal study of enrollment at MACH. The significant relationships between *enrolled* and the other predictor variables can be used as a starting point for future studies which may attempt to build a predictive equation for enrollment at MACH. The variables of significance can also serve as a focus point for the MACH Marketing Office. Conversely, any significant relationships between *not enrolled* and the other predictive variables require further study. These relationships might serve as a starting point for the Patient Representative or MACH's Customer Satisfaction Committee, as they seek to determine some of the shortcomings or dissatisfiers in the delivery of care at MACH. SPSS 6.1.3 will be used to perform all calculations.

#### Description of Variables

A review of the relevant literature yielded several general independent predictor variables which were correlated with the enrolled and not enrolled variables (dependent variables). These variables are: gender (CBO 1993), age (Strumwasser et al 1989), family size (Taylor, Beauregard & Vistnes 1995), travel distance to treatment (Berki & Ashcraft 1980), convenience (Berki & Ashcraft 1980), total family income (Davis et al 1995), other insurance (RAND 1990), health plan benefits, cost (Mechanic, Ettel & Davis 1990), access to a particular provider (Mechanic, Ettel & Davis 1990, and Weiss 1995), satisfaction with a recent visit to MACH (Ware, Davies, and Stewart 1977), and overall satisfaction with MACH during the past year (McCormick 1991). In addition, studies focusing on military health

care decisions listed the following independent predictor variables which will also be tested: status (sponsor or spouse)(Stoloff 1993), rank (Stoloff 1993), familiarity with health insurance options (Center for Naval Analyses 1992), access to information (Stoloff 1994), and access to military health care (Stoloff). Each survey question contains multiple variables. The dichotomous variables will be coded using the 1 if (indicated by the respondent as his or her response), or 0 otherwise system. Continuous variables were recorded as whole numbers. Certain questions in the survey were for administrative purposes only, and are not included in the analysis. There are a total of 34 variables which will be examined. The variables are listed below as they appear in the survey. The actual variable from each question is italicized. Study variables will be italicized throughout the remainder of this paper.

#### PART I: Demographics

1. **Status of respondent:** Is the respondent an *active duty service member* (1), or the *spouse* (2) of a service member?
2. **Branch of service respondent's sponsor:** Is the respondent or respondent's sponsor in the *Army* (3), or *other than Army* (4) (Navy, Air Force, Marines, or Coast Guard)?
3. **Pay grade of respondent's sponsor:** Is the respondent or respondent's sponsor in the grade of *E4 or below (junior)*(5), or *E5 and above (senior)*(6)?
4. **Age of respondents:** What is the *age* (7) in years of the respondent?
5. **Gender of respondent:** Is the respondent *male* (8) or *female* (9)
6. **Respondent's Family size:** What is *number of family members* (10) residing with sponsor, including the respondent?
7. **Distance to MTF:** How far must the family travel to the Prime site or local MTF, *5 miles or less* (11), or *6 or more miles* (12)?

8. **Family income:** What is the total combined adult family income for 1995?

Is it \$19,999 or less (13), or \$20,000 or more (14).

PART II: Health Care Coverage and the Tricare Program.

1. **Enrollment in Tricare Prime:** The respondent is asked whether or not he or she is or is not enrolled in Tricare Prime. The respondent answers *yes* (15) or *no* (16).

2. **Familiarity with Tricare:** How familiar is the respondent with the Tricare Program?. The respondent can respond *very familiar, familiar, unfamiliar, or very unfamiliar*. This four-point scale was collapsed into a 2-point scale. Those responding *very familiar or familiar* are considered to be *familiar* (17), while those responding *unfamiliar or very unfamiliar* are considered to be *unfamiliar* (18) with the Tricare Program.

3. **Received Tricare Brief:** Has the respondent received a Tricare Prime brief, individually or in a group setting? The respondent answers *yes* (19) or *no* (20).

4. **What is the Number 1 reason for enrolling in Tricare Prime.** The enrollee/respondent is asked to indicate the number 1 reason why his or her family was enrolled in Tricare Prime. The choices were developed based on a review of the literature, as well as from "The Health Care Evaluation Survey". Nonenrollees are provided the default answer f. The choices include:

- a. The *cost-effectiveness* of Tricare Prime (21).
- b. To guarantee *access to the military treatment facility* (22).

- c. *Convenience* of the Prime clinic (23).
- d. *Access to a particular provider* (24).
- e. *Enhanced benefit package* (25).
- f. *Not enrolled* (26).

5. **Other health insurance:** Does the respondent's family possess any form of health insurance. The respondent is asked to answer *yes* (27) or *no* (28).

#### PARTS III and IV: Patient Satisfaction

1. **Satisfaction with most recent visit:** The respondent was asked to indicate they were very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, or very dissatisfied with 9 aspects of their most recent visit to MACH in the past year. This using a 5 -point Likert-type scale was collapsed into a 3-point scale for computation purposes. Those responding either very satisfied or satisfied to a question were considered *satisfied* (29), and those responding dissatisfied or very dissatisfied were considered *dissatisfied* (30). Neutral responses, *neither satisfied or dissatisfied* (31) were recorded as such. This technique was adopted from a discussion with Dr. Stoloff, a researcher with the Center for Naval Analyses. The responses were graded 3,2,1, for satisfied, neutral, and dissatisfied (Sommer and Sommer 1991). The responses were totaled, and depending the total, the respondent was given a single satisfaction rating of satisfied, neutral, or dissatisfied for the entire series of questions.

2. **Satisfaction with MACH overall:** The respondent was asked to indicate if he or she strongly agrees, agrees, neither agrees nor disagrees, disagrees, or

strongly disagrees with 9 questions about their overall perceptions of MACH. The 5-point Likert scale was again collapsed into a 3-point scale. Those who either agreed or strongly agreed were considered to *agree* (32) with the question, and those who disagreed or strongly disagreed were considered to *disagree* (33). Neutral responses, i.e., *uncertain* (34), were recorded as such. Each respondent was given a single satisfaction rating for the series of questions.

### Working Hypotheses

A review of the literature led to the development of several working hypotheses. The general null hypothesis ( $H_0$ ) for this study is that Tricare Prime enrollment for the military family cannot be predicted, or Tricare Prime enrollment is not dependent on any of the predictor variables listed above:

$$Y = f(x)$$

or

$$\text{Enrollment} = f(\text{any of the predictor variables})$$

The general alternate hypothesis ( $H_a$ ) for this study is that Tricare Prime enrollment for the military family is dependent on one or more of the predictor variables:

$$Y = f(x)$$

or

$$\text{Enrollment} = f(\text{one or more predictor variables})$$

Other specific hypotheses that warrant testing as a result of the literature review are:

1. Prime enrollment is influenced by patient satisfaction.
2. Prime enrollment is influenced by familiarity with the Tricare program.

3. Prime enrollment is influenced by the family's decision to purchase or have access to some other form of health insurance.

4. Prime enrollment is influenced by a family's desire to have access to a particular provider.

5. Prime enrollment is influenced by a family's desire to ensure access to the MTF.

6. Prime enrollment is influenced by its recognized cost-effectiveness and income level of potential enrollee.

7. Prime enrollment is influenced by its attractive enhanced benefit package.

8. Prime enrollment is influenced by the travel distance to and convenience of the PCM.

9. Prime enrollment is influenced by various demographic characteristics (age, gender, rank, family size).

The converse of several of these hypotheses, that Prime nonenrollment, for instance, is influenced by patient dissatisfaction.

### Reliability and Validity

Certain measures will be taken to insure the reliability and validity of this study. Kerlinger (1986) tells the student that reliability is a matter of consistency, dependability, stability, predictability, and accuracy. Reliability is measuring things right. The reliability of the survey instrument as it relates to consistency and dependability was previously established by the Center for Naval Analyses. Also, data from the individual surveys were first entered into a spreadsheet. The spreadsheet was printed, and the individual surveys were compared to the spreadsheet to guarantee the accuracy of the data.

Validity on the other hand is measuring the right thing or variable. Kerlinger (1986) refers to construct and content validity. Content validity refers to the degree

with which a set of items or variables taps into the content of some domain of interest (i.e., enrollment) (Zeller & Carmines 1990). Content validity is supported by the review of the literature which determined the variables for this study. Construct validity focuses on the an assessment of the theoretical relationship between the constructs or variables, and is addressed within a theoretical context (Zeller & Carmines). The relationship between the constructs of this study is detailed in the models of Berki and Ashcraft (1980) in Figure 1, and by McCormick (1991) in Figure 2. Further, the validity of this study is supported by the fact the survey instrument has been previously validated for content by the Center for Naval Analyses. Also, the modifications to the survey were reviewed for validity by Dr. Stoloff of the CNA.

#### Ethical considerations

The researcher has addressed the ethical considerations of this study in two ways. First, the participants in this study were informed of its purpose and use through both a letter from the Commander, MACH, and the instrument itself. Both the instrument and the commander's letter informed potential participants that participation is voluntary. Second, the researcher initially knew the identity of the random sample through the CHCS-generated mailing list. The survey was returned through the mail with no identifying factors of the participants other than the demographic information on the survey itself. Therefore, the researcher will be "blind" as to the participants' identities.

## CHAPTER 3

### RESULTS

#### General

A total of 2000 surveys were delivered during the week of March 25, 1996, based upon the stratified sample in Table 1. The results of the survey will be displayed in four parts: Demographics, Information Regarding Tricare, Patient Satisfaction, and significant relationships based on the Pearson Product-Moment Coefficient (r) correlation matrix (Appendix L). The tables listing information regarding demographics, Tricare and patient satisfaction derive their data from descriptive statistics contained in Appendix K , as well as frequency charts which were not included as an appendix.

Table 1 - The Stratified Sample

	Junior AD	Spouse Junior	Senior AD	Spouse Senior
Enrolled	250	250	250	250
Not Enroll	250	250	250	250

A total of 420 surveys were returned, with 406 surveys being usable. A total of 42 surveys were returned as undeliverable. The response rate for this survey is 21%. The overall response rate for the survey was poor. The response rate

among senior active duty and senior spouses was significantly higher than the very poor response rate among junior enlisted and junior spouses.

Table 2 - Responses & Response Rate per Strata (n = 420)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	
Enrolled	23/9%	31/12%	92/37%	124/50%	270/27%
Not Enrolled	17/7%	21/8%	60/24%	52/21%	150/15%
Ben Cat* Rates	40/8%	52/10%	152/31%	176/36%	420/21%

\* Beneficiary Category

Table 3 - The Final Sample per Strata (n = 406)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	
Enrolled	21	29	91	123	264
Not Enrolled	15	18	58	51	242
Total/Ben Cat	36	47	149	174	406

### Demographics

Descriptive statistics for the entire survey sample, as well as for the sub-samples of enrollees and nonenrollees are reported in Appendix K. The following demographics are highlighted below by strata: Table 4 - Mean Age of Respondents; Table 5 - Gender of Respondents; Table 6 - Respondent's Family Size; Table 7 - Percentage of Respondents Who Travel 5 Miles or Less to the MTF/Percentage of Those Who Travel 6 Miles or More to MTF; and Table 8 -

Percentage of Those Whose Total Family Income is Less Than \$19,999/Percentage of Those Whose Family Income is Greater than \$20,000.

Table 4 shows the stratified mean age of respondents by beneficiary category. Means for each beneficiary category, as well as means for *enrolled* and *not enrolled* respondents are below. The mean age for the entire study was 31.6 years. The mean age for enrollees was 31.9 years, while the mean age for nonenrollees was 31.1 years .

Table 4 - Mean Age of Respondents  
(in years)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Mean
Enrolled	25.2	26.1	34.4	32.4	31.9
Not Enrolled	25.0	26.9	32.9	32.2	31.0
Mean for Bencat	25.1	26.4	33.8	32.3	31.6

The gender of the respondents is represented as a percentage of males/females in Table 5. Overall, 38.4% of those who participated in this study were males, and 61.6 % were females. The active duty beneficiary categories were between 60% and 85% male, while the spouses of junior and senior active duty were between 92% and 100% female.

Table 5 - Gender of Respondents  
(% male/female)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Mean
Enrolled	66.7/33.3	0.0/100.0	83.5/16.5	3.3/96.7	36.6/64.4
Not Enrolled	60.0/40.0	0.0/100.0	84.5/15.5	7.8/92.2	43.7/56.3
Mean for Bencat	64.0/36.0	0.0/100.0	84.0/16.0	5.0/95.0	38.4/61.6

Table 6 represents the average family size for those who responded to this survey. Overall, the average family size was 3.6 persons, with the enrollee family size being 3.7 persons , and the nonenrollee family being 3.4 persons.

Table 6 - Family Size  
(persons per family)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Mean
Enrolled	3.0	3.6	3.6	3.8	3.7
Not Enrolled	2.7	3.2	3.3	3.8	3.4
Mean for Bencat	2.9	3.5	3.5	3.8	3.6

The travel distance to the MTF is listed in Table 7 as a percentage of those who travel 5 miles or less/those who travel 6 or more miles. A total of 80.8% of those receiving care at MACH travel 5 miles or less to MACH. The percentage of nonenrollees traveling 6 or more miles was about 12% higher than for enrollees.

**Table 7 -Travel distance to MACH**  
(Less than 5 miles to MTF/6 or more miles to MTF [% of Respondents])

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Overall %
Enrolled	90.5/9.5	89.7/10.3	81.3/18.7	85.4/16.4	84.8/15.2
Not Enrolled	80.0/20.0	88.9/11.1	69.0/31.0	70.6/29.4	73.2/26.8
% for Bencat	86.1/13.9	89.4/10.6	76.5/23.5	81.0/19.0	80.8/19.2

Table 8 represents the Total family Income for survey respondents. Nearly 22% of the respondents reported that they have a family income of \$20,000 or less. The percentage of junior active duty or junior spouses who reported income of \$19,999 or less ranged from 44% to 86%.

**Table 8 - Total Family Income**  
(Less than \$19,999/greater than \$20,000 [% of Respondents])

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Overall %
Enrolled	47.6/52.4	44.8/55.2	11.0/89.0	13.0/87.0	18.6/81.4
Not Enrolled	86.7/13.3	72.2/27.8	8.6/91.4	15.7/84.3	27.5/72.5
% for Bencat	63.9/36.1	55.3/44.7	10.1/89.9	13.8/86.2	21.7/78.3

### Information Regarding Tricare

Table 9 represents the respondent's familiarity with the Tricare program. Respondents were asked whether they were very familiar, familiar, unfamiliar, or very unfamiliar with the Tricare program. Overall, 61% of the respondents indicated that they were either familiar or very familiar with Tricare. Enrollees (72.3%) as a group were more familiar with Tricare than nonenrollees (44.4%).

Table 9 - Familiarity with Tricare  
(% who were familiar)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Overall %
Enrolled	71.6	89.7	70.3	69.9	72.3
Not Enrolled	46.7	44.4	46.6	41.2	44.4
% for Bencat	61.1	72.3	61.1	61.5	62.6

The percentage of those respondents who received a Tricare briefing is reported in Table 10. Only 46% of respondents reported that they received a Tricare briefing. A comparison of enrollees to nonenrollees reveals that the enrollee briefing percentage was 30% higher when compared to that of nonenrollees (56% compared to 26%). The enrolled active duty beneficiary categories reported the highest briefing rates, with the junior active duty rate of 68% and the senior active duty rate of 73%.

**Table 10 - Received Tricare Briefing**  
(% who received briefing)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Overall %
Enrolled	66.7	44.8	72.5	45.5	56.4
Not Enrolled	20.0	27.8	36.2	15.7	26.1
% for Bencat	47.2	38.3	58.4	36.8	45.8

Table 11 represents respondents who reported that their family had some other form (CHAMPUS Supplemental, civilian employer, etc.) of health insurance. Overall, only 9% of respondents reported that they had other health insurance. The percentages of enrollees and nonenrollees reporting private health insurance was 4.2% and 18.3% respectively. The highest levels of private health insurance was among not enrolled junior active duty (26.7%) and nonenrolled spouses of junior active duty (27.8%).

**Table 11 - Civilian Health Insurance**  
(% that have some form of insurance other than military)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Overall %
Enrolled	9.5	0.0	3.3	4.9	4.2
Not Enrolled	26.7	27.8	13.8	17.6	18.3
% for Bencat	16.7	10.6	7.4	8.6	9.1

Table 12 represents the number 1 reason reported for enrolling in Tricare. The enrollee had a choice among five different reasons for enrolling. Each of the four beneficiary categories reported that *guaranteed access to the MTF* was their number 1 reason for enrolling. Overall, 56.4% of enrollee respondents cited *guaranteed access to the MTF* as their reason for enrolling in Tricare.

Table 12 - Number 1 Reason for Enrolling in Prime  
(reason/%)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Mean
Enrolled	access/MTF(52.4)	access/MTF(37.9)	access/MTF(67.0)	(access/MTF(53.7)	access/MTF(56.4)
Not Enrolled	NA	NA	NA	NA	NA

The 5 choices are listed below with the percentage of respondents who selected that response:

<i>Guarantee access to MTF -</i>	56.4%
<i>Prime is cost-effective -</i>	26.5%
<i>Convenience of Prime clinic -</i>	10.2%
<i>Guarantee access to provider -</i>	4.2%
<i>Enhanced benefits package -</i>	2.7%

#### Patient Satisfaction

Table 13 lists the percentage of respondents who indicated overall satisfaction with their last visit to MACH within the past year. The respondents were asked to rate 9 aspects of their last visit using a 5-point Likert scale, and an overall

satisfaction rating was calculated for each respondent. Overall, 75 % of respondents were satisfied with their most recent visit. The percentage of satisfied enrollees was 79%, while 67% of nonenrollees expressed satisfaction with their most recent visit to MACH.

Table 13 - Overall Satisfaction w/Last Visit  
(% satisfied)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Overall %
Enrolled	42.9	96.6	75.2	82.9	78.8
Not Enrolled	53.3	77.8	67.2	66.7	66.9
% for Bencat	47.2	89.4	72.5	78.2	74.6

Table 14 represents respondents' overall satisfaction with MACH. Each respondent was asked to evaluate their overall perception of MACH concerning 9 areas and using a 5-point Likert scale. Each respondent was given an overall score for their responses. Only 52% were given an overall satisfied with MACH. The percentage of enrollees expressing overall satisfaction was 58%, while only 41% of nonenrollees were overall satisfied.

Table 14 - Overall satisfaction with MACH  
(% satisfied)

	Junior AD	Junior Spouse	Senior AD	Senior Spouse	Overall %
Enrolled	28.6	69.0	57.1	61.0	58.0
Not Enrolled	33.3	61.1	43.1	33.3	40.8
% for Bencat	30.6	89.4	51.7	52.9	52.2

### Significant correlations

A Pearson Product-Moment Coefficient (r) correlation matrix was calculated using SPSS 6.1.1 version. A total of 34 variables were included in the correlation matrix. The matrix highlights significant positive and negative relationships at the significance levels of  $p < .05$  and  $p < .01$  for a 2-tailed test. A significant positive relationship between two variables exists if an increase in one variable results in a corresponding increase in the other variable. A negative relationship between two variables exists if an increase in one variable results in a decrease in the other variable (Sommer & Sommer 1991). The correlation matrix is listed as Appendix L.

The following variables had a significant positive relationship with the variable enrolled: Total Family Income (\$20,000. or more ) - ( $r = .1127, p < .05$ ); Reason for enrolling #4 (*access to particular provider*) - ( $r = .1231, p < .05$ ); Reason for enrolling #5 (*enhanced benefit package*) - ( $r = .0977, p < .05$ ); Tricare Prime briefing (Yes) - ( $r = .2847, p < .01$ ); Distance to MTF (5 miles or less) - ( $r = .1378, p < .01$ ); Familiarity with Tricare Program (*familiar*) - ( $r = .2713, p < .01$ ); Other source of health insurance (*no*) - ( $r = .2235, p < .01$ ); Overall satisfaction with most recent visit (*satisfied*) - ( $r = .1389, p < .01$ ); Overall satisfaction with MACH (*satisfied*) - ( $r = .1684, p < .01$ ); Reason for enrolling #1 (*cost-effectiveness of Prime*) - ( $r = .3229, p < .01$ ); Reason for enrolling #2 (*guarantee access to MTF*) - ( $r = .5461, p < .01$ ); Reason for enrolling #3 (*convenience of Prime clinic*) - ( $r = .1803, p < .01$ )

The following variables have a significant *negative* relationship with the variable enrolled: Total family income (\$19,999 or less) - ( $r = -.1127$ ,  $p < .05$ ); Tricare Prime briefing - (No) - ( $r = -.2744$ ,  $p < .01$ ); Distance to MTF (6 miles or more) - ( $r = -.1378$ ,  $p < .01$ ); Familiarity with the Tricare program (No) - ( $r = -.2713$ ,  $p < .01$ ); Other form of health insurance (Yes)- ( $r = -.2323$ ,  $p < .01$ ); Satisfaction with last visit to MACH (*dissatisfied*) -  $r = (-.1609$ ,  $p < .01$ ); Overall satisfaction with MACH (*dissatisfied*)-  $r = (-.1651$ ,  $p < .01$ ).

The Pearson (r) matrix identified the following variables as having a significant positive relationship with variable *not enrolled*: Total family income (\$19,999. or less) - ( $r = .1127$ ,  $p < .05$ ); Distance to the MTF (5 miles or less) - ( $r = .2744$ ,  $p < .01$ ); Familiarity with Tricare (*unfamiliar*) - ( $r = .2717$ ,  $p < .01$ ); Other health insurance (yes) - ( $r = .2323$ ,  $p < .01$ ); Satisfaction with last visit (*dissatisfied*) - ( $r = .1609$ ,  $p < .01$ ); Overall perception of MACH (*dissatisfied*) - ( $r = .1651$ ,  $p < .01$ ).

The correlation matrix identified the following significant negative relationships between *not enrolled* and the following variables: Tricare briefing (Yes) - ( $r = -.2847$ ,  $p < .01$ ); Distance to MTF(5 miles or less) - ( $r = -.1378$ ,  $p < .01$ ); Familiarity with Tricare (yes) - ( $r = -.2713$ ,  $p < .01$ ); Total family income (\$20,000 or more) - ( $r = -.1127$ ); Other health insurance (no) - ( $r = -.2235$ ,  $p < .01$ ); Satisfaction with last visit (*satisfied*) - ( $r = -.1389$ ,  $p < .01$ ); Overall perception of MACH (*satisfied*) -( $r = -.1684$ ,  $p < .01$ ).

There is another significant relationships which needs to be noted in the context of this study. This is the significant positive relationship ( $r = .4151$ ,  $p < .01$ ) between Tricare Briefing (yes), and Familiarity with Tricare (yes).

## CHAPTER 4

### DISCUSSION

#### General

The purpose of this case study was to detail the development and current status of Tricare Prime enrollment at McDonald Army Community Hospital. A descriptive beneficiary survey was used to provide the current assessment of Tricare Prime enrollment. This discussion will evaluate the results of the survey in the following format: Review of the response rate; Demographics; Information Regarding Tricare, Patient Satisfaction, and Hypothesis Review. An evaluation of these results will focus on the overall results for the study sample,  $n = 406$ , and will also focus on the results relating to enrollees and nonenrollees in Tricare Prime. A listing of the variables with significant relationships for the Enrolled and Not Enrolled Variables are listed in the Results section of this paper and again in Appendix K. This discussion will refer only to the variables showing a significant relationship with *Enrolled* and/or *Not Enrolled* variables, and will not refer to their specific ( $r$ ) value or specific level of significance. This section will close with the researcher drawing a general picture of the enrollees and nonenrollees who responded to "The McDonald Army Community Hospital Beneficiary Survey".

### The Response

The overall response rate for "The McDonald Patient Beneficiary Survey" was 21%. The response rate is the fraction of the surveys sent that are returned. This rate was significantly lower than the response rate observed by Stoloff (1994), in his Tricare Baseline Analysis of Access and Satisfaction. Dr. Stoloff reported an overall response rate of 38%. His study of Tricare in the Tidewater region included retirees and their dependents, who had the highest response rates. This fact may account for the higher response rate of his survey compared to this survey.

The poorest response rate in the MACH survey was among the junior enlisted (E4 & below) and the spouses of junior enlisted. These response rates were: 9% for enrolled junior enlisted; 6% for nonenrolled junior enlisted; 12% for enrolled junior spouses; and 7% for nonenrolled junior spouses. Stoloff (1994) also found that the response rate for the E4 and below in general was the poorest. It is difficult to determine exactly why the junior enlisted and their spouses continue to respond poorly to requests for their participation. One possibility is that the method of delivery needs to be examined. If they continue to respond poorly to mail surveys, then attempts must be made to deliver surveys in another fashion. One technique might be through the NCO chain of command, another through family support groups. But, both of these techniques detract from the researchers ability to guarantee randomness in the sample. At a minimum, some effort should be made to meet with a representation of junior enlisted to gauge their perception of the mail survey process to determine reasons why they respond in so few numbers.

## Demographics

A total of seven demographic questions in Part I resulted in 12 study variables which were included in the Pearson (r) matrix (Appendix K). The question the variable relates to appears in normal type, while the study variable or variables derived from the question is italicized. These variables were: Question 1 - Status : *Active Duty Service Member, or Spouse of an Active Duty Service Member*; Question 2 - Rank: *E4 & Below* or *E5 & Above*; Question 4 - *Age in Years* ; Question 5 - Gender: *Male or Female*; Question 6 - *Number of Family Members*; Question 7 - Distance to MTF: *5 Miles or less*, or *6 Miles or more*; Question 8 - Total Family Income: *\$19,999 or less*, or *\$20,000 or more*. The correlation matrix identified several demographic variables with significant positive and negative relationships with the variable *Enrolled*.

The variables with a significant positive relationship with the *Enrolled* variable included Distance to MTF - *5 Miles or less*, and Total Family Income - *\$20,000 or more*. Conversely, these same two variables had a significant negative relationship with the variable *Not Enrolled*. Also, the variables Distance to MTF - *6 Miles or more*, and Total Family Income - *\$19,999 or less* had significant negative relationship with the *Enrolled* variable, and significant positive relationships with the *Not Enrolled* variable.

The study revealed that overall, 81% of this study's respondents travel *5 miles or less* to the MTF. The data in Table 6 also reveals that nearly 85% of enrollees travel *5 Miles or less* to the MTF, and this number drops to 73% for

nonenrollees. Also, higher percentages of junior active duty and their spouses (86% & 89%) live closer to the MTF, than do senior active duty and their spouses (77% & 81%). The reason for a larger percentage of seniors living farther from the MTF/military post is supported by Table 7 (Total Family Income).

Overall, 22% of respondents earned \$19,999 or less, while 78% earned \$20,000 or more. The percentage of enrollees earning \$19,999 or less was 19%, while 28% of nonenrollees earned the same. Family income examined by beneficiary category reveals that significant percentages of the junior active duty and junior spouses listed their total family income at \$19,999 or less (64% & 55 %), while 90% of the senior active duty and 86% of their spouses said their total family income was \$20,000 or greater. Those with larger family incomes probably have more flexibility in their finances. They therefore have a better opportunity to reside off of Fort Eustis.

The following demographic variables had no statistical significance with either the *Enrolled* or *Not Enrolled* variables: Status - *Active Duty Service Member* or *Spouse of an Active Duty Service Member*; Rank - *E4 & Below* or *E5 & Above*; Age in Years; Gender - *Male* or *Female*; and *Number of Family Members*. But, an evaluation of these variables' descriptive statistics reveals some very useful data.

The mean age for this study was 31.6 years of age (Table 3). Enrollees were almost 1 year older (31.9 years) than nonenrollees (31.0 years). As expected, senior active duty (33.8 years) and their spouses (32.2 years) are older than junior active duty (25.1 years) and their spouses (26.4 years).

Overall, 38% of respondents were male, while 62% were female. The gender ratio was 36% male/64% female for enrollees, and 44% male/56% female for nonenrollees. Service members were predominately male (junior - 64%/ senior - 84%), while the spouses of the active duty were predominately female (junior spouses - 100%/senior spouses - 95%).

No significant differences in family size was noted, with the average family being 3.6 members. The average enrollee family had 3.7 members, while the average nonenrollee family had 3.6 members. Some differences were reported in the size of the family when comparing junior and senior families. The junior active duty and their spouses reported family sizes of 2.9 and 3.5 members, while the seniors reported sizes of 3.5 and 3.8 members.

In summary, the average respondent lives within *5 miles or less* of the MTF (81%), had a total family income of *\$20,000 or more* (78%), is *female* (68%), is 31.6 years of age, and has an average *family size* of 3.6 members. There were small differences when comparing enrollees and nonenrollees, but none of any real significance. Comparing active duty with their spouses revealed only that the active duty are predominately male, while their spouses are predominately female. A comparison of junior and senior categories reveals only that higher percentages of junior families live closer to the MTF.

### Information Regarding Tricare and Health Insurance

A total of five questions in Part II of the survey resulted in 14 study variables which were included in the Pearson (r) matrix. The questions appear in normal type, while the variables derived from each question are italicized. These variables are: Question 1( Enrollment status) - Yes = *Enrolled*, or No = *Not enrolled*; Question 3 (Familiarity with Tricare) - *Familiar* or *not Familiar*; Question 4 (Tricare Briefing) - Yes or No; Question 5 (Number 1 Reason for Enrolling) - *cost-effectiveness*, *guarantee Access to MTF*, *convenience of MTF/PCM*, *guarantee access to Provider*, *enhanced Benefit Package*, and *not Enrolled* (a default answer for nonenrollees); Question 6 (Other Health Insurance) - Yes or No.

Nearly 63% of respondents expressed some level of familiarity with the Tricare Program. A comparison of enrollees and nonenrollees further reveals that 72% of enrollees were familiar with Tricare, while *only 44%* of nonenrollees expresses familiarity with Tricare. The level of familiarity for enrollees ranges from 72% (junior active duty) to 90% (junior spouses). The level of familiarity among nonenrollees runs between 41%( senior spouses) and 47% (junior active duty). A comparison among the enrolled and not enrolled beneficiary categories shows that junior spouses were most familiar with Tricare (89% familiarity) among enrollees, and senior spouses were least familiar among nonenrollees (41% familiarity).

*Only 46%* of respondents acknowledged having a Tricare briefing, either individually or in a group setting. These percentages range from 26% for nonenrollees to 56% for enrollees. The percentages who received a briefing among

enrollees ranges from 45% (junior spouses) to 72% (senior active duty). Among nonenrollees, the briefing rate ranges from 37% (senior spouses) to 58% (senior active duty). In general, the active duty are more likely to have received a Tricare brief than their spouses.

The overall percentage of respondents having some form of other health was 9%. Only 4% of enrollees as a group had other insurance, while 18% of nonenrollees had other insurance. The other insurance rates among enrollees range from 0% (junior spouses) to 10% (junior active duty). The rates among nonenrollees range from 7% for (senior active) to 28% (junior spouses).

The number 1 reason cited by all beneficiary categories of enrollees for enrolling the family in Prime was to *guarantee access to the MTF*. Overall, 56% of enrollees cited this as their number 1 reason, with the range being from 38% (junior spouses) to 68% (senior active duty). Access to the MTF was followed by the *cost-effectiveness* of Prime (26.5%), *convenience* of the MTF/PCM (10.2%), *guarantee access to provider* (4.2%), and the *enhanced benefit package* (2.7%).

In summary, 63% of respondents were familiar with Tricare, and 47% of respondents had received a Tricare Briefing. Only 9% of respondents had other health insurance. Access to the MTF was the number 1 reason among all categories of enrollees for enrolling.

Among enrollees, 72% indicated that they were familiar with the Tricare program, and 56 % had received a Tricare briefing. This is compared to nonenrollees, who reported that *only 44%* were familiar with the Tricare program

and *only* 26% reported having a briefing. Only 4% of enrollees compared to 18% of nonenrollees indicated that they had other health insurance. Comparisons between juniors and seniors, and active duty and spouses revealed no significant differences.

There was a perception of this researcher that Tricare has been marketed very well to the active duty family. But, clearly these numbers do not support this perception. For the past two years, representatives from MACH have attended newcomer's briefings, family support group meetings, and officers' wives club meetings. They held mass Tricare Prime briefings open to the general public and attended just about every other organized function on Fort Eustis in an effort to market Tricare Prime to the active duty military family. MACH also delivered a Tricare Prime Handbook and enrollment packet to each door in the family housing of FT Eustis about 45 days prior to this survey. These events have been supported through the mass media by the TMAR2 Marketing Division. But, for some reason the message is not penetrating the active duty military family to the extent it should. The question has got to be who and what are we missing?

The Pearson (r) correlation matrix (Appendix K) shows that there is a significant relationship (  $r = .4151$  with  $p < .01$ ) between receiving a Tricare briefing and acknowledging familiarity with the Tricare program. The significant relationships of enrollment with both familiarity with Tricare and receiving a briefing has previously been established. The researcher has identified that nonenrollees report both lower rates of familiarity and receipt of the Tricare briefing than enrollees. The rates for enrollees could also be better! Add to this the concerns

over guaranteeing access to the MTF expressed by enrollees, and the fact that overall only 9% of survey respondents indicated that they had other health insurance. These low rates of other health insurance mean that active duty families rely, and will probably continue to rely, on the MTF as their sole source of care. This is echoed by enrollees universal concerns over access.

For the present, access is not a major issue at MACH. But, several other Prime PCM sites throughout Tidewater have reached maximum capacity. One of the major reasons that MACH is not at capacity is that CHAMPUS-eligible retirees have not overwhelmingly responded to Tricare. But, as capacity trickles to near full, active duty families might see themselves competing with CHAMPUS-eligible retirees for space at the PCM. Coupled with this are the Medicare-eligible retirees. If Medicare Subvention becomes a fact and these retirees are in some form eligible to enroll, this too means more eligibles competing for space at the Prime site. Why is enrollment so important?

We must remember that health care is a quality of life issue for the active duty family, just like the post exchange and commissary. Try denying access to the PX or commissary to active duty military families. Well, there is the potential that access to the MTF will become very limited and maybe even non-existent for those families that fail to enroll in Tricare Prime. If Tricare is a quality of life issue, it should become a command issue, and not just for the MTF commander. The MTF will get paid one way or the other, be the enrollees retirees or active duty family members. The mission of the MTF commander is to practice good business sense

and maximize enrollment with whomever Congress says is eligible to enroll. Local unit commanders must ensure that their soldiers and soldier's spouses are being briefed and have every opportunity to enroll.

### Patient Satisfaction

Parts III of the survey required the respondent to answer 9 questions regarding his or her most recent visit to MACH within the past year. These questions are intended to assess the respondents satisfaction with MACH and use 5-point scale: Very satisfied, satisfied, neither satisfied or dissatisfied, dissatisfied, or very dissatisfied. The researcher collapsed the 5-point scale into a 3-point scale (satisfied, neither, dissatisfied). Those responding either very satisfied or satisfied were considered satisfied, while those responding either dissatisfied or very dissatisfied were considered dissatisfied. Neutral responses remained the same.

Overall, 75% of respondents expressed satisfaction with their most recent visit. Enrollees (79%) were more satisfied than nonenrollees (67%). Examining satisfaction by beneficiary category, junior spouses were more satisfied than their sponsors (89% to 47%), and senior spouses were also more satisfied than their sponsors (78% to 73%).

Respondents were asked to indicate their overall satisfaction with MACH by responding to 9 questions. Again, a 5-point Likert-type scale was used, which was collapsed into a 3-point scale by the researcher. Only 52% of respondents expressed overall satisfaction with MACH. Enrollees (58%) were again more

satisfied than nonenrollees (41%). In general, junior spouses were more satisfied than their sponsors (89% to 31%), as were senior spouses (53 to 52%).

The statistical significance of the relationships between enrollment and both satisfaction with the most recent visit (  $r = .1389$ ,  $p < .01$ ) and overall satisfaction with MACH (  $r = .1684$ ,  $p < .01$  ) is established by the Pearson (r) correlation matrix in Appendix K. The matrix also establishes the relationship between nonenrollment and dissatisfaction with the most recent visit (  $r = .1609$ ,  $p < .01$ ), and nonenrollment and dissatisfaction with MACH overall (  $r = .1651$ ,  $p < .01$ ). Dissatisfaction with MACH could serve as a starting point in discovering why the active duty family is not enrolled. With this in mind, the results of the Parts III and IV of this study have been forwarded to the MACH Customers Satisfaction Committee for detailed examination of the specific questions in each part. But, maintaining the satisfaction of enrollees is as important.

The focus the past two years has been on *initial* enrollment. The focus in the near future must shift from a single focus of initial enrollment to the dual focus of initial enrollment and retention. The retention of enrollees should be a concern of HMO managers from the time the first enrollee agrees to enroll. Patient satisfaction is the cornerstone to the retention process as depicted below.

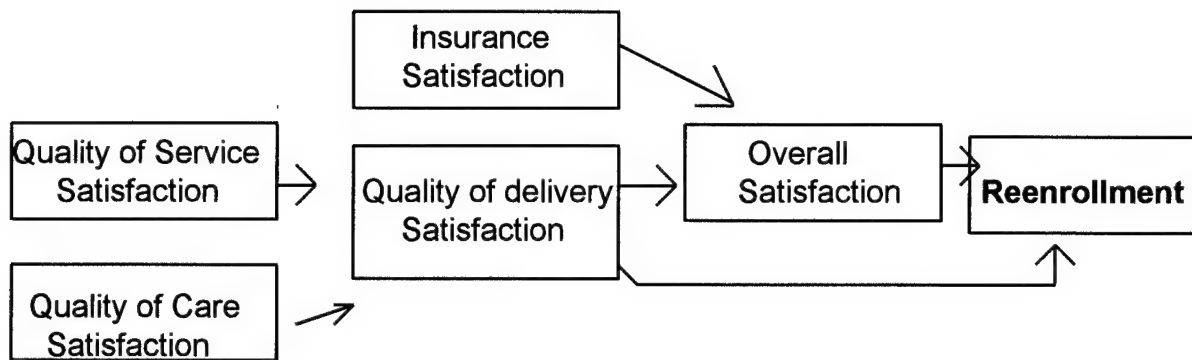


Figure 2

The reenrollment decision considering patient satisfaction (McCormick 1991).

There has been little discussion throughout the Military Health Services System (MHSS) of the enrollment retention process, and the downside of the process, i.e., disenrollment. The enrollment process is a relatively new experience throughout the MHSS, and will be the focus until all of the Managed Care Support Contracts (MCSC) are in operation.

#### Enrollees and Nonenrollees

The most significant differences between enrollees and nonenrollees can be summed up in one sentence. Enrollees are more likely to have had a Tricare briefing, are more familiar with Tricare, and express higher rates of satisfaction with both their most recent visit to MACH, and with MACH overall.

#### Review of Hypotheses

Several working hypothesis were developed by the researcher in Chapter 2, the Methods and Procedures portion of this paper. The Pearson Product-Moment Coefficient ( $r$ ) correlation matrix has provided statistical significance between Prime

enrollment (dependent) and various other study variables (independent or predictor). The significance of these relationships has provided a basis for future studies, using other more precise statistical methods, which may attempt to develop a predictive equation for Prime enrollment at MACH. The working hypothesis which were demonstrated to be statistically significant are:

1. Prime enrollment is influenced by travel distance to and convenience of the MTF.
2. Prime enrollment is influenced by familiarity with the Tricare program.
3. Prime enrollment is influenced by having received a Tricare briefing.
4. Prime enrollment is influenced by a family's lack of other health insurance.
5. Prime enrollment is influenced by a family's desire to guarantee access to the MTF.
6. Prime enrollment is influenced by cost considerations.
7. Prime enrollment is influenced by a family's desire to guarantee access to a particular provider.
8. Prime enrollment is influenced by patient satisfaction.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATIONS

#### Conclusion

This graduate management project has detailed the development of Tricare Prime, and has provided the MACH commander with a current assessment of certain aspects of Tricare Prime enrollment at MACH. As a result of this assessment, the researcher offers several recommendations.

McDonald Army Community Hospital has come a long way in its efforts to become a managed care organization. At the center of this process has been the evolution of Tricare Prime, the HMO option and cornerstone of Tricare. Although active duty service members are automatically enrolled into Tricare Prime, enrollment into Tricare Prime continues to be a voluntary process for family members of the active duty.

Enrollment translates into dollars and cents for the MTF commander. Future financing methodologies, such as capitation and alternative or revised financing, will pay the commander to a large extent for only those beneficiaries who he is able to enroll in Tricare Prime, his HMO.

The future of military health care may very well depend on the success of Tricare in cost-effectively providing health care for eligible beneficiaries of the MHSS. That said, cost-effectiveness is a local event, and the success of Tricare is

therefore a local event. This success hinges on the ability of the local MTF commander's to enroll and maintain enrollment in Tricare Prime. For Tricare Prime provides the MTF commander the best opportunity to manage the health care and related costs for local beneficiaries. Tricare Prime enrollment will only be successful if it is a team effort involving the MTF commander, as well as all local field grade and company commanders. The following recommendations are offered to assist in the expansion of the penetration of Tricare Prime at McDonald Army Community Hospital.

#### Recommendations

**Recommendation 1:** Develop a more systematic enrollment tracking process.

Those active duty or family members who leave a Tricare briefing without signing up themselves or their family members should receive some sort of follow-up within 72 hours. We have educated our beneficiaries, they have not enrolled, and we *must* follow-up before the information is gone and we must reeducate them. This follow-up contact will be one-on-one, and therefore labor intense. The follow-up can address their specific concerns which may not have been answered during the group briefing. Enrollees translate into capitated dollars. The cost of a few minute phone call by a health benefits advisor is nothing compared to the capitated dollars the commander will receive for each enrollee.

**Recommendation 2:** Make Tricare Prime enrollment a command issue.

There is not a company or field grade commander in the Fort Eustis Military Community that does not know his or her soldiers dental readiness category,

particularly if the soldier is CAT III or IV and nondeployable. We also require single parents and dual military couples to develop family care plans. Well, suppose a soldier was nondeployable if he did not have a health care access plan developed for his family. The response might be that the family always has access at the MTF, at least through the emergency room. We already know that access to the MTF for nonenrollees is becoming more limited with each new enrollee, and the receipt of primary health care at the E.R. is not cost-effective, difficult to manage, and runs contrary to the conception of primary care and the primary care manager. The right thing to do is to convince the vast majority of families that Tricare is the best form of health care for them. If health care is a quality of life issue, and Tricare and Tricare Prime are the cornerstones of military health care, then we must universally raise command interest in Tricare to new levels.

**Recommendation 3: Develop a Tricare Prime specific database**

In order to accomplish Recommendations 1 & 2, a dedicated database should be developed. This database should go beyond tracking who is enrolled, as does the Composite Health Care System (CHCS), and must record who was briefed, when they were briefed, lists phone contacts, mailings, and all other marketing efforts. This data base will enable health benefits advisors and marketers to manage enrolled and nonenrolled beneficiaries. This data base can provide commanders lists of who has and has not received a briefings. The ultimate goal should be 100% contact. This goal cannot be guaranteed at this point.

**Recommendation 4:** Continue to monitor the relationship between enrollment and patient satisfaction.

Patient satisfaction has the ability to become the indicator by which managed care organizations are judged to be successful or not. Cost, quality, and access indicators have always been the focus of managed care organization management, payers, insurers and consumers. Patient satisfaction instruments ask patients to evaluate the cost, quality, and ease of access of health services along with a variety of other aspects involved in the delivery of care.

The significance of the relationship between satisfaction and enrollment, and dissatisfaction and nonenrollment was established earlier in this paper. The MACH Commander has been provided a base from which to track satisfaction in his organization. The importance of satisfaction and its relation to reenrollment becomes important as MACH and the entire Tidewater region, both civilian and military, transition to a managed care market. This managed care market of the future might pose significant threats to maintaining enrolled populations as military consumers are offered other health care plan options.

**Recommendation 5:** Tailor Tricare briefings, and target audiences.

It might be time to split the hairs, that is, to develop focused Tricare Prime briefings, and look at innovative places and ways to deliver these briefings. There is a chance that many of our junior enlisted never had to use or never fully understood the dollars and cents of CHAMPUS (Tricare Standard). Now we have complicated

their decision process with Tricare Prime and Tricare Extra. What may seem to be a simple cost-comparison of health benefits to some may not be that simple for everyone. Just ask the company level commander who is required to counsel soldiers for writing bad checks, and insure that they receive some sort of basic financial management class to include the rudiments of balancing a check book. The fact that Tricare is simply the best financial option for the active duty, particularly the junior enlisted, may not be obvious. We must make it obvious.

The best source of information and best opportunity to enroll will always be the one-to-one. Also, we have taken it for granted that we have covered all the bases in the delivery of Tricare briefings. It is now time to think out of the box and look to reach those who have been apprehensive or unable to obtain a Tricare briefing. The MACH Beneficiary Survey indicated that there is room in all beneficiary categories for improvement as far as increasing the briefing and familiarity rates for Tricare. This researcher believes that one possible focus should be the military spouse.

The picture is one of a young parent who is unable to attend the Tricare briefing because he or she has a child and knows that this briefing is not the place for children. He or she is also unable to or cannot afford a baby-sitter. We must reach out to these young parents, and provide both an environment conducive to their needs and information that they can readily understand.

A possibility is to provide baby-sitter services concurrent with the Tricare briefing. Another possibility is to create a briefing environment where children are

welcome, a sort of Romper Room or day care center environment, where children can play while their parents listen.

The Tricare briefings should be tailored to highlight particular aspects of Prime which may be attractive to this particular audience. The enhanced benefit package offers a variety of guaranteed preventative services for children at no cost, yet only 1% of junior active duty and 1% of junior spouse enrollees listed the enhanced benefit package as their number 1 reason for enrolling.

**Recommendation 6:** Utilize the focus group.

The focus group is a mechanism to bring groups of peers together to expressive their perspective. The military is familiar with an often utilized tool of commanders known as the sensing session. The focus group is similar to the sensing session, but removes all of the military trappings which might not be conducive to obtaining unfiltered information. Focus group interviews are conducted in a nonthreatening environment, and are useful for working with categories of people who have historically had limited power and/or influence (Morgan 1993).

The focus group process should be applied to virtually every beneficiary category to solicit their attitudes towards McDonald Army Community Hospital. But, this research project has identified several potential focus group audiences which should receive priority. The first would be the E4 and below nonenrollee beneficiary category. The focus group process may assist the command in determining junior enlisted family attitudes in general towards MACH, and specifically address their

apprehensions about not enrolling. The next focus group should be composed of nonenrollees from all beneficiary categories of military families. "The MACH Beneficiary Survey" has provided some useful data which could be the starting point for the development of the focus group process at MACH.

**Appendix A**  
**MEDICAL SUPPORT TO THE FAMILIES OF ACTIVE DUTY MILITARY**  
**IN THE TIDEWATER AREA JANUARY 1996**

**TRICARE PRIME                      TRICARE EXTRA                      TRICARE STANDARD**

<b>CHOICE</b>	<b>Voluntary Enrollment Program (HMO)</b>	<b>Over 1400 Network Doctors Available (Family can choose from a list of network doctors)</b>	<b>Straight CHAMPUS, Greatest Flexibility (Family can choose any doctor)</b>
<b>OUTPATIENT COSTS</b>	No cost incurred at Prime site or at military site E-1 to E-4                      E-5 & above \$ 6.00   Each office visit   \$12.00 \$10.00   Emergency Rm   \$30.00 \$ 5.00   Prescription   \$ 5.00	15% (after annual deductible) Office fees are pre-negotiated with the doctors and therefore are less costly than they are under Tricare Standard	20% (after annual deductible) plus anything above the CHAMPUS Cap (Balance billed can't exceed 115% of CHAMPUS allowable)
<b>DEDUCTIBLE (ANNUAL)</b>	NONE	E-1- E-4                      \$ 50 per person \$100 per family E-5 &                      \$150 per person above                      \$300 per family	E-1-E-4    \$ 50 per person \$ 100 per family E-5 &       \$ 150 per person above       \$ 300 per person
<b>INPATIENT COSTS</b>	\$11.00 per day	\$9.70 a day or \$25 total, whichever is greater (no deductible)	\$9.70 a day or \$25 total, whichever is greater (no deductible)
<b>ENROLLMENT FEE</b>	No cost to active duty family members.  Retirees: individual: \$230.00 family:     \$460.00	None (just ensure family members are in DEERS)	None (just ensure family members are in DEERS)

Source: MACH Marketing, 1995.

## **APPENDIX B**

### **TRICARE PRIME PRIMARY CARE MANAGER SITES IN THE TIDEWATER REGION**

1. Tricare Prime Boone Clinic, Little Creek Amphibious Base, Norfolk
2. Tricare Prime Norfolk
3. Tricare Prime Virginia Beach \*
4. Tricare Prime Langley AFB
5. Tricare Prime, "MACH Prime 1", Ft Eustis (1st floor)
6. Tricare Prime Ft Eustis, 3rd Floor Clinic
7. Tricare Prime Chesapeake, Greenbrier
8. Tricare Prime Naval Medical Center, Portsmouth\*
9. Tricare Prime Oceana, Virginia Beach\*
10. Tricare Prime United States Coast Guard, Portsmouth\*

\* Sites near or at maximum capacity as of 1 January 1996..

Source: TMAR2 Retiree Tricare Trifold , January 1996.

**APPENDIX C**  
**TRICARE PRIME ENROLLMENT COST CHART**  
**For Care Provided by Civilian CHAMPUS Providers - NOT THE PCM**

<b>EFFECTIVE 1 OCT 1995</b>	<b>PRIME (With Care Authorization)</b>	<b>POINT OF SERVICE* (No Care Authorization)</b>
<b>ENROLLMENT FEE</b>	Active Duty Family Members - \$0 Retiree & others - \$230/person or \$460/family	
<b>DEDUCTIBLE</b>	NONE	\$300 per person \$600 per family
<b>OUTPATIENT SERVICES</b>		
<b>Office visits:</b> Outpatient office based specialty and surgical care; consultation diagnosis and treatment by a specialist; allergy tests and treatments; osteopathic manipulation; medical supplies used in the office including casts, dressings, and splints. Limited home health care.	E4 & below family members - \$ 6 E5 & above family members - \$12 Retirees & others - \$12 Except enhanced benefits-no copay	Deductible and 50% of allowable charges
<b>Laboratory and X-ray services:</b> (no copayment if included in provider's office visit).		Plus possible
<b>Immunizations:</b> (limited coverage - Active duty families only)		excess charges
<b>Eye exams:</b> (limited coverage, Active duty families only).		
<b>Family planning and well baby care</b> (up to 24 mos of age): Exclusion in the CHAMPUS Policy Manual apply		
<b>Ambulance Services:</b> When medically necessary as defined by the CHAMPUS Handbook and the service is a covered benefit.	E4 & below family members - \$10 E5 & above family members - \$15 Retirees & others - \$20	
<b>Ambulatory surgery</b> (same-day surgery): Authorized hospital-based or free-standing ambulatory surgical center that is CHAMPUS certified. (not performed in the physician's office)		

# APPENDIX C (continued)

EFFECTIVE 1 OCT 1995	PRIME (With Care Authorization)	POINT OF SERVICE* (No Care Authorization)
<b>EMERGENCY SERVICES</b>	E4 and below family members - \$10 E5 and above family members - \$30 Retirees and others - \$30	Deductible and 50%
<b>DURABLE MEDICAL EQUIPMENT</b> Prosthetic devices, and medical supplies prescribed by an authorized provider which are covered under CHAMPUS handbook rules.	E4 and below family members - 10% E5 and above family members - 15% Retirees and others - 20%	of allowable charges plus possible
<b>PRESCRIPTION DRUGS</b>	Per prescription (up to 30 day supply) Active duty family members - \$5 Retirees and others - \$9	excess charges
<b>INPATIENT SERVICES</b>		
<b>Hospitalization:</b> Semiprivate room (and when medically necessary, special care units), general nursing and hospital service. Includes inpatient physicians and their surgical services, meals including special diets, drugs and medications while an inpatient operating and recovery room, anesthesia, laboratory tests, x-rays and other radiology services, medical supplies and appliances, blood and blood products services. Unlimited services with authorization, as medically necessary.	\$11 per day  or minimum	50% of the  allowable
<b>Maternity:</b> Hospital and professional services (prenatal, post natal). Unlimited services with authorization, as medically necessary.	of	charge
<b>Skilled Nursing Facility Care:</b> Limited coverage - per CHAMPUS manual. Case Management might also apply.	\$25 per day	
<b>CATASTROPHIC CAP</b>	Active Duty \$1000 Retirees and others \$3000	Does not apply

\*CHAMPUS beneficiaries retain the right to obtain service without authorization with higher cost sharing.  
Source: TMAR2 Tricare Handbook, October, 1995.

## APPENDIX D

### TRICARE PRIME ENHANCED BENEFITS

<i>Services</i>	<i>Frequency or Age Interval</i>
Lab, x-ray, Mammography	Screening blood lead level; once between age 12 mos - 6 yrs. Rubella antibodies: females, once age 12-18. Non-fasting total blood cholesterol: every five yrs over age 18. Fecal occult blood testing: annually age 50 & over. Mammogram: baseline age 40; every two yrs age 40-50; annually age 50 & over.
Pap smears	Annually
Immunizations	DPT: 2 mos; 4 mos; 6 mos. DTaP (acellular) 15-18 mos; once age 4-6. OPV: 2 mos; 4mos; 15-18 mos; once age 4-6 MMR: age 15 mos and once age 4-6 or 11-12; once after age 19 unless evidence of immunity. Td: once age 14-16; every 10 yrs thereafter. Pneumococcal vaccine: persons at increased risk due to other medical condition. HIB: age 2, 4, 6 & 15 mos. PPD; at 12 mos; and after close contact with a person with suspected TB. Hepatitis B: see schedule below for infants; once age 11-19 if not immunized as an infant.
Periodic health promotion/disease prevention exams over 24 mos of age.	One eval, and followup during age intervals: 2-4; 5-11; 12-17; 18-39; 40-64. Blood pressure during part of above exams. Clinical breast exam annually age 40 & over Clinical testicular exam annually age 18-40. Rectal prostate exam annually age 40 & over.
Blood pressure	Every two years age 18 & over.
Hearing screening	Otoacoustic emissions (OAE) screening; infant before leaving hospital; once age 2-5; once age 6-10; once age 12-17; once age 40-59; once > 60 yrs.
Sigmoidoscopy or colonoscopy	Once every 3-5 yrs over age 50.
Serologic screening of all pregnant women for HBsAg (hepatitis B surface antigen)	Infants born to HBsAg-negative mothers receive HBG vaccine before discharge; second dose at age 1-2 mos; third dose at age 6-18 mos. Infants born to HBsAg-positive mothers immunize with HBIG preferably within 12 hrs of birth. Second and third dose at 1 and 6 mos of age. Serologic status should be checked at 9 mos fourth dose administered to infants who are HBsAg-negative with titers of anti-HBs < 10 mIU/ml. Retest one month later for anti-HBs. Up to two additional doses may be considered for those who fail to respond.

**There is no co-pay for these services with authorization from the PCM.**

Source: TMAR2 Tricare Enrollment Handbook, September, 1995.

## APPENDIX E

### FORT EUSTIS CATCHMENT AREA ACTIVE DUTY WITH FAMILY MEMBERS

Sponsor Pay Grade	Number by Grade
E1	131
E2	110
E3	269
E4	1046
E5	1020
E6	1088
E7	716
E8	152
E9	62
EX	56
O1	21
O2	38
O3	174
O4	107
O5	90
O6	33
O8	1
OX	14
W1	34
W2	87
W3	46
W4	42
W5	9
WX	2

TOTAL: 5372

TOTAL E4 & BELOW: 1547

TOTAL E5 & ABOVE: 3825

Source: DEERS POPDB, Fiscal Year 1995, 3rd quarter.

## APPENDIX F

### FORT EUSTIS CATCHMENT AREA POPULATION BY BENEFICIARY CATEGORY

Beneficiary Category	Number in Category
Active duty	7789
<b>Active duty family</b>	<b>19895</b>
Guard/reserve	182
Guard/reserve family	397
Retired	7612
Retired family	11255
Survivor	1632
Other	165

TOTAL

48,762

Source: DMIS: January, 1996.

## APPENDIX G



### **McDonald Army Community Hospital Beneficiary Survey**

This survey is designed to determine what factors are important to you in the selection of a health plan for your family when presented with several options. Specifically, this survey focuses on your decision to enroll or not enroll in Tricare Prime. Your answers will assist this command in determining what is important to your family in the selection of a health plan, and will help shape the future of care delivered at McDonald Army Community Hospital (MACH). **This survey will be kept strictly confidential.** Your participation is voluntary. If you would like to participate, please complete and return this survey. If you would rather not participate, please return the uncompleted survey. Thank you.

**This survey should be completed solely by the person to whom the mailing envelope was addressed. Please return this survey in the enclosed postage-paid envelope.**

**Please indicate your response by placing an "X" in the space which best describes you, your family or how you feel about a particular question**

**PLEASE PROCEED TO NEXT PAGE**

## PART I: FAMILY INFORMATION

Please indicate which response best describes you and/or your family by placing an "X" in the appropriate space.

1. You are?

☐ Active duty service member (to include dual-military) ☐ Spouse of an active duty service member

2. Branch of service of sponsor?

☐ Army ☐ Navy ☐ Air Force ☐ Marines ☐ Coast Guard

3. Pay grade of sponsor?

☐ E1-E4 ☐ E5-E6 ☐ E7-E9 ☐ W1-W5 ☐ O1-O3 ☐ O4-O10

4. What is your age in years?

years

5. What is your gender?

☐ Male ☐ Female

5. How many family members live in your household? Count yourself, spouse, children and other dependents. Please write the number (Do not count roomers or boarders).

family members

6. What is the location of your family's housing?

☐ On-Post ☐ Off-Post

7. What is the distance your family must travel to a military medical treatment facility?

☐ 0-5 miles ☐ 6-10 miles ☐ 11-20 miles ☐ 20 miles or greater

8. What is your family's total combined 1995 income before taxes. That is all the income that you and your spouse earned in 1995, such as wages, tips, salary, interest, alimony, and pensions?

☐ Less than \$10000 ☐ \$10,000 - \$19999 ☐ \$20000 - \$29999 ☐ \$30000 - \$39999  
☐ \$40000 - \$49000 ☐ \$50000 - \$74999 ☐ \$75000 - \$99999 ☐ \$100000 and over

**PLEASE PROCEED TO NEXT PAGE**

## **PART II: YOUR HEALTH CARE COVERAGE**

1. Is your family enrolled in Tricare Prime?

☐ Yes ☐ No

2. If your family is enrolled, where is your Primary Care Manager located?

☐ MACH "Prime" 1/Ft Eustis 1st floor ☐ MACH/Ft Eustis 3rd floor ☐ Not enrolled ☐ Other

3. How familiar are you with the Tricare Program?

☐ Very Familiar ☐ Somewhat familiar ☐ Not very Familiar ☐ Not at all Familiar

4. Did you receive a Tricare Prime briefing, either individually or in a group setting?

☐ Yes ☐ No

5. If you are enrolled, what was the number one reason your family enrolled in Tricare Prime? Please check one only.

- ☐ Tricare Prime is the most cost-effective means of care for my family.
- ☐ To guarantee our access to the military health system, we did not want to get shut out.
- ☐ The Tricare Prime Clinic is the most convenient form of health care available.
- ☐ To guarantee our access to a particular provider.
- ☐ Tricare Prime has an enhanced benefit package not available to nonenrollees.
- ☐ My family is not enrolled in Tricare Prime.

6. Does your family have some other form of health insurance, that is CHAMPUS supplemental, Medicare, civilian HMO or managed care provided by an employer other than the military?

☐ Yes ☐ No

**PLEASE PROCEED TO NEXT PAGE**

### PART III: YOUR MOST RECENT MEDICAL CARE VISIT

1. When was your most recent visit to McDonald Army Community Hospital?

☐ Within the past month   
 ☐ 1 to 3 months ago   
 ☐ More than 3 but less than 6 months ago  
☐ 6 to 12 months ago   
 ☐ More than 12 months ago

2. Thinking about your most recent visit to McDonald Army Community Hospital, how strongly are you satisfied or dissatisfied with each of the following statements (one "X" for each line)

	Very Satisfied	Somewhat Satisfied	Neither Satisfied nor Dissatisfied	Somewhat Dissatisfied	Very Dissatisfied
a. The amount of time between the day you made an appointment and the day of your visit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. The amount of time it took you to get there.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. The amount of time it took you to find a parking space.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. The amount of time you had to wait to see the health care professional once there.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. The amount of time the health care professional spent with you.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. The information given to you about what was wrong with you or about what was being done for you.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. The dollar cost to you.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. The quality of care you felt was provided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. This medical care visit overall.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**PLEASE PROCEED TO NEXT PAGE**

## PART IV: SATISFACTION WITH MEDICAL CARE

1. Please answer the questions in this section based on your **overall perception** of McDonald Army Community Hospital.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
a. Doctors are good about explaining the reasons for medical tests.	_____	_____	_____	_____	_____
b. I think my doctor's office has everything needed to provide complete care	_____	_____	_____	_____	_____
c. The medical care I have been receiving is just about perfect.	_____	_____	_____	_____	_____
d. When I go for medical care, health care professionals are careful to check everything when treating me.	_____	_____	_____	_____	_____
e. I have easy access to the medical specialists I need.	_____	_____	_____	_____	_____
f. My doctors treat me in a very friendly and courteous manner.	_____	_____	_____	_____	_____
g. Doctors usually spend plenty of time with me.	_____	_____	_____	_____	_____
h. I can get an appointment for my medical care right away.	_____	_____	_____	_____	_____
i. I am able to get medical care whenever I need it.	_____	_____	_____	_____	_____

**THE END.**

**THANK YOU FOR COMPLETING THIS SURVEY, PLEASE RETURN IT THE ENCLOSED POSTAGE-PAID ENVELOPE**

## APPENDIX H

### NEWSPAPER ADVERTISEMENT FOR SURVEY

# ATTENTION BENEFICIARIES OF MCDONALD ARMY COMMUNITY HOSPITAL

DURING THE WEEK OF MARCH 25, 1996, YOU MAY BE SELECTED  
TO PARTICIPATE IN A SURVEY WHICH ASSESSES THE  
HEALTH CARE DELIVERY SYSTEM AT  
**MCDONALD ARMY COMMUNITY HOSPITAL.**

THIS SURVEY WILL ASSIST THE LEADERSHIP OF  
MCDONALD IN DETERMINING WHAT REALLY MATTERS TO YOU AND  
YOUR FAMILY IN THE SELECTION AND RECEPTION OF HEALTH CARE.

*YOUR RESPONSES WILL HELP SHAPE THE FUTURE OF*

**MCDONALD ARMY COMMUNITY HOSPITAL**

THANK YOU IN ADVANCE FOR YOUR PARTICIPATION IN THIS  
VERY IMPORTANT MATTER!

GEORGE W. WEIGHTMAN  
U.S. ARMY  
COMMANDING OFFICER

## APPENDIX I

### MACH Commander's Cover Letter to Survey

Office of the Commander

March 25, 1996

Dear Military Family Member,

You have been randomly selected to assist McDonald Army Community Hospital with assessing its health care delivery system. The enclosed survey will help us determine what is most important to you when selecting health care for your family members. Your responses will help shape the future delivery of care at McDonald.

Your participation in this survey is voluntary, and your answers are strictly confidential. Your prompt response to this survey is greatly appreciated. You may return the survey through the U.S. Mail with the enclosed envelope or drop the survey in one of the patient survey boxes located throughout McDonald. Please respond by 8 April 1996.

If you have any questions regarding this survey, please feel free to contact Captain Mike Hershman at 878-7975.

Thank you for your assistance in this very important matter.

Sincerely,

George W. Weightman  
Colonel, U.S. Army  
Commanding Officer

## APPENDIX J

### McDonald Army Community Hospital Tricare Prime Capacity & Enrollment status

	<u>Capacity</u>	<u>Enrolled</u>	<u>%</u>
<b><u>1st Floor PCM:</u></b>			
General outpatient clinic (adult):	9,909	8,033*	81
Pediatric clinic:	3,429	2,539	74
Overall	13,338	10,572	79
<b><u>3rd Floor PCM:</u></b>			
Sept 96 target**	8,000	3,841	48
<b><u>Total w/ Sept 96 target</u></b>	21,338	14,413	68
<b>Total w/ Sept 97 target</b>	31,338	14,413	46

\* Includes 5,500 active duty automatically enrolled to 1st floor PCM

\*\*3rd Floor PCM has an enrollment target of 8,000 for 1 sept 96, and a final target capacity of 18,00 for 1 Sept 97.

Source: McDonald Army Community Hospital Resource Management Division, May, 1996.

## APPENDIX K

### DESCRIPTIVE STATISTICS

(Entire Sample)

N = 406

Variable	Mean	SD	Min	Max	Label
Age	31.57	6.51	20	58	age in years
Bran1	.93	.26	0	1	branch of service-army
Bran2	.07	.26	0	1	branch of service- other
Brief1	.46	.50	0	1	Tricare briefing - yes
Brief2	.54	.50	0	1	Tricare briefing - no
Dis1	.81	.39	0	1	distance - 5mi or less
Dis2	.19	.39	0	1	distance - 6mi or more
Enrol1	.65	.48	0	1	enrolled
Enrol2	.35	.48	0	1	not enrolled
FAM	3.57	1.08	1	7	# of family members
Fam1	.63	.48	0	1	Familiar w/Tricare -Y
Fam2	.37	.48	0	1	Familiar w/Tricare -No
Gen1	.38	.49	0	1	gender - male
Gen2	.62	.49	0	1	gender - female
Incl1	.22	.41	0	1	income less than\$19k
Inc2	.78	.41	0	1	income \$20k or more
Ins1	.09	.29	0	1	other insurance - yes
Ins2	.91	.28	0	1	other insurance- no
Lvis1	.75	.44	0	1	satisfaction/last vis
Lvis2	.05	.22	0	1	neutral/last vis
Lvis3Grad	.20	.40	0	1	dissat/last vis
Mac1	.52	.50	0	1	overall satisfied
Mac2	.09	.52	0	1	overall neutral
Mac3	.39	.49	0	1	overall dissatisfied
Rank1	.20	.40	0	1	E4 & below
Rank2	.80	.40	0	1	E5 & above
Rea1	.17	.38	0	1	cost-effective
Rea2	.37	.48	0	1	access to MTF
Rea3	.07	.25	0	1	convenience
Rea4	.03	.16	0	1	access to provider
Rea5	.02	.13	0	1	enhanced benefits
Rea6	.34	.48	0	1	not enrolled
Stat1	.46	.50	0	1	active duty
Stat2	.54	.50	0	1	spouse

## APPENDIX K

(continued)

### DESCRIPTIVE STATISTICS

(Enrollees)

N = 264

Variable	Mean	SD	Min	Max	Label
Age	31.85	6.34	20	58	age in years
Bran1	.94	.25	0	1	branch of service-army
Bran2	.06	.25	0	1	branch of service- other
Brief1	.56	.50	0	1	Tricare briefing - yes
Brief2	.44	.50	0	1	Tricare briefing - no
Dis1	.85	.36	0	1	distance - 5mi or less
Dis2	.15	.36	0	1	distance - 6mi or more
Enrol1	1.00	.00	0	1	enrolled
Enrol2	.00	.00	0	1	not enrolled
FAM	3.66	1.05	1	7	# of family members
Fam1	.72	.45	0	1	Familiar w/Tricare -Y
Fam2	.28	.45	0	1	Familiar w/Tricare -No
Gen1	.36	.48	0	1	gender - male
Gen2	.64	.48	0	1	gender - female
Inc1	.19	.39	0	1	income less than\$19k
Inc2	.78	.41	0	1	income \$20k or more
Ins1	.09	.29	0	1	other insurance - yes
Ins2	.81	.29	0	1	other insurance- no
Lvis1	.79	.41	0	1	satisfaction/last vis
Lvis2	.05	.22	0	1	neutral/last vis
Lvis3Grad	.16	.36	0	1	dissat/last vis
Mac1	.58	.49	0	1	overall satisfied
Mac2	.08	.28	0	1	overall neutral
Mac3	.34	.47	0	1	overall dissatisfied
Rank1	.19	.39	0	1	E4 & below
Rank2	.81	.39	0	1	E5 & above
Rea1	.27	.30	0	1	cost-effective
Rea2	.56	.50	0	1	access to MTF
Rea3	.10	.30	0	1	convenience
Rea4	.04	.20	0	1	access to provider
Rea5	.03	.16	0	1	enhanced benefits
Rea6	.00	.00	0	1	not enrolled
Stat1	.42	.50	0	1	active duty
Stat2	.58	.50	0	1	spouse

## APPENDIX K

(Continued)

### DESCRIPTIVE STATISTICS

(Nonenrollees)

N = 142

Variable	Mean	SD	Min	Max	Label
Age	31.04	6.81	21	46	age in years
Bran1	.92	.28	0	1	branch of service-army
Bran2	.08	.26	0	1	branch of service- other
Brief1	.26	.44	0	1	Tricare briefing - yes
Brief2	.74	.44	0	1	Tricare briefing - no
Dis1	.73	.44	0	1	distance - 5mi or less
Dis2	.27	.44	0	1	distance - 6mi or more
Enrol1	.00	.00	0	1	enrolled
Enrol2	1.00	.00	0	1	not enrolled
FAM	3.41	1.11	1	7	# of family members
Fam1	.44	.50	0	1	Familiar w/Tricare -Y
Fam2	.56	.50	0	1	Familiar w/Tricare -No
Gen1	.44	.50	0	1	gender - male
Gen2	.56	.50	0	1	gender - female
Inc1	.27	.45	0	1	income less than\$19k
Inc2	.73	.45	0	1	income \$20k or more
Ins1	.18	.39	0	1	other insurance - yes
Ins2	.82	.38	0	1	other insurance- no
Lvis1	.67	.47	0	1	satisfaction/last vis
Lvis2	.05	.22	0	1	neutral/last vis
Lvis3Grad	.20	.40	0	1	dissat/last vis
Mac1	.41	.49	0	1	overall satisfied
Mac2	.09	.29	0	1	overall neutral
Mac3	.50	.50	0	1	overall dissatisfied
Rank1	.23	.42	0	1	E4 & below
Rank2	.77	.42	0	1	E5 & above
Rea1	.00	.00	0	1	cost-effective
Rea2	.00	.00	0	1	access to MTF
Rea3	.00	.00	0	1	convenience
Rea4	.00	.00	0	1	access to provider
Rea5	.00	.00	0	1	enhanced benefits
Rea6	.99	.12	0	1	not enrolled
Stat1	.51	.50	0	1	active duty
Stat2	.49	.50	0	1	spouse

# APPENDIX L

## Pearson Product-Moment Coefficient (r) Correlation Matrix (Partial)

Age	Bran1	Bran2	Brf1	Brf2	Dis1	Dis2	Enrl1	Enrl2	Fam	Fam1	Fam2	Gen1	Gen2	Inc1	Inc2	Ins1	Ins2
Age																	
Bran1																	
Bran2																	
Brf1																	
Brf2																	
Dis1																	
Dis2																	
Enrl1																	
Enrl2																	
Fam																	
Fam1																	
Fam2																	
Gen1																	
Gen2																	
Inc1																	
Inc2																	
Ins1																	
Ins2																	
Lvis1																	
Lvis2																	
Lvis3																	
Mac1																	
Mac2																	
Mac3																	
Rank1																	
Rank2																	
Rea1																	
Rea2																	
Rea3																	
Rea4																	
Rea5																	
Rea6																	
Stat1																	
Stat2																	

.4151

.2847\* -.2744\* .1378\* -.1378\*  
 -.2847\* .2744\* -.1378\* .1378\*

.4151\*

.2713\* -.2713\*  
 -.2713\* .2713\*

-.1127\*\* .1127\*\*  
 .1127\*\* -.1127\*\*

-.2323\* .2323\*  
 .2323\* -.2323\*

\* - significant at p<.01 # - significant at p<.05 (2-tailed)

# APPENDIX L Pearson Product-Moment Coefficient (r) Correlation Matrix (continued)

	L vis1	Lvis2	Lvis3	Mac1	Mac2	Mac3	Rank1	Rank2	Rea1	Rea2	Rea3	Rea4	Rea5	Rea6	Stat1	Stat2
Age																
Bran1																
Bran2																
Brf1																
Brf2																
Dis1																
Dis2																
Enrl1																
Enrl2																
Fam																
Fam1																
Fam2																
Gen1																
Gen2																
Incl																
Inc2																
Ins1																
Ins2																
Lvis1																
Lvis2																
Lvis3																
Mac1																
Mac2																
Mac3																
Rank1																
Rank2																
Rea1																
Rea2																
Rea3																
Rea4																
Rea5																
Rea6																
Stat1																
Stat2																

\* - significant at p < .01      \*\* significant at p < .05      (2-tailed)

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